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Editorial

ORGANIZED MEDICINE TO CO-OPERATE WITH THE FEDERATED CLUBS

For the coming year a working program has been arranged with the Illinois Federation of Women's Clubs which involves active co-operation with the Illinois State Medical Society for constructive health work from the community angle.

Among projects to be fostered by the 70,000 federated club women of Illinois with the active aid of Illinois physicians are a series of Health Conferences, the first to be given at Urbana November 12 and 13, which will constitute a symposium of authoritative health counsel for laymen. At these conferences all speakers discussing disease, its prevention and cure, will be competent physicians recommended by the Illinois State Medical Society. Community studies will be made furnishing an appraisal of actual health needs and an effort will be made to utilize the full efficiency of every local and auxiliary agency to meet those needs. Following such community inventories, intensive educational work will be directed through those sections of the state where the need has been shown to be the greatest—not only along the lines of maternity and infant welfare but other equally necessary and valuable phases of preventive medicine.

In working together toward a higher health efficiency for Illinois, a lowered death rate—regarding the desirability of which there has never been a difference of opinion between their organization and that of Illinois physicians—much practical good may be accomplished by both units while the best ways and means of attaining it are proven out through actual experiment.

The Illinois State Medical Society welcomes the spirit in which the clubwomen of Illinois place the common good first. The physicians

stand ready to do their share as professional men and good citizens to stimulate educational work toward such an aim.

CONSISTENCY, THOU ART A JEWEL

A grocer in Chicago advocates the socialization of medicine, though not of the grocer. The grocer contends that doctors make too much money and holds that medical services should be given to people at infinitestimal cost. There are very few rich and comparatively few well-to-do medical men. Many grocers have grown in a few years from poor men to millionaires; some are accused of profiteering in foodstuffs during the war. The contrast between the financial status of grocers and physicians is sharp.

The inconsistency of the present day attempt to socialize the "other fellow's business" is portrayed by Henry Swift Ives of Chicago, when he says:

"A Chicago suburban village referred to as a millionaire colony maintains a municipal electric light plant when not one voter in a hundred in this village would for a moment favor the socialization of his particular business."

"In a prosperous middle western city one of the leading advocates of a municipally owned traction line is a prosperous insurance agent, but he bitterly opposes socialists in their effort to force the state into the insurance business."

"A lumberman in the far west is fearful that his state will go in the business of manufacturing fruit boxes for farmers at cost, yet he advocates compulsory state workmen's compensation insurance to the exclusion of private enterprise and competition."

"A meat packer advocates government ownership of the railroads but fights it for his own business. Numberless instances of similar inconsistencies could be given."

"It is remarkable that in industries most threatened by government ownership, many of the leaders do not seem to care what becomes of the other fellow in the same boat, provided they themselves keep a few feet ahead of the socialist sheriff with his writ of ejectment."

"The real issue in America today is not whether certain industries shall be socialized, but whether the institution of private property shall be maintained."

"It is too much to expect poeple to take seriously protestations of one industry against government ownership when we find the leaders of that industry advocating government ownership of somebody else's business."

There is no more reason why medicine should be socialized than there is for the socialization of every other industry. People are just as much entitled to free groceries, free clothes, free shoes, and every necessity of life as there is for free medical attendance.

Socialism will wipe out the rights of the individual and destroys the initiative and self-reliance which is the bulwark of our country.

IS THE UNIVERSITY OF ILLINOIS BEING SEDUCED BY EMISSARIES OF STATE MEDICINE?

Placing the practical power of the medical school of the University of Illinois and of similar institutions in the hands of laymen or of medical theorists, rather than among actual, experienced practitioners would lead to the general belief of a lamentable trend toward state medicine.

Medical schools should be run by medical men. Instructors in a state institution, especially a school supported by tax-payers, should be chosen with an eye to the development of practicing physicians by a transference of the theory of actual experience. The money paid in by tax-payers should be used to educate physicians, rather than to chase rainbows, and thus rescue medical education from schools of doctors of philosophy and place it in the hands of real doctors.

Take for instance our own state institution, and what do we find? Under the plan of reorganization of the College of Medicine of the State University that is now under way what will result for the tax-payers—a medical school or a research laboratory?

First we find that the medical school is actually

run by a layman—a man who is not a graduate in medicine. Next, that a pathologist is made a full time professor of medicine. Also that a high-salaried professor of surgery is allowed to reserve one-fourth of his time for private practice. Backed by the prestige of a large institution, such an indulgence always results in the institution being the handmaid of the individual. Instead of the individual furthering the interests of the institution, it evolves that the institution is used to exploit the individual. Again the tail wags the dog. Prestige and institutional liberty afford two perquisites by which such individuals achieve an otherwise unattainable status as experts with a consequent enormous income from arbitrary consultations.

The non-practitioners will have the right of way over the professors who teach during interregnums of their daily practice, under the present plan of reorganization. For this plan provides for the annual appointment of clinical teachers, but the fulltime theorists are afforded stability of tenure in appointment. Beyond question this is an inimical form of state medicine, this long period appointment of full time, salaried clinical teachers, when complicated by an allowance of one-fourth time off for private practice, comment is best reserved.

This last named feature has brought down an avalanche of criticism upon a prominent university in a neighboring state.

WHY DOES THE MEDICAL SCHOOL OF THE UNIVERSITY OF ILLINOIS TURN AWAY PRACTICALLY AS MANY STUDENTS AS IT ADMITS?

Taxpayers in rural districts, that are suffering from occasional medical attention, or in many instances from no resident doctors at all, are amazed at the news that the medical school of the University of Illinois is turning away more students than it admits.

The need for doctors is great. The output of men to care for the public health is not keeping pace with the growth of the population. Practical, everyday general practitioners are becoming almost as scarce as the proverbial hen's teeth. Of men to perform infrequent and so-called skilled operations in handsome and luxurious hospitals there are plenty and to spare. Any man or woman who needs an expensive laparotomy can find institutions by the score and clever men by the dozens to do this delicate work. But where, Oh where are the practical general physicians to attend to the minor ills of general humanity? The man to lance a boil, to cure a case of constipation or any one of the hundreds of common mortal ailments, the healing of which day by day did so much in years gone by to make the family physician one of the helpful powers from end to end of the United States? . . . where is this man in hundreds of country districts today?

The answer lies in the fact that the family doctor of former years is passing from the scene and he is not being replaced by the current graduates from medical schools. Instead of viewing the medical school as a place in which to learn how to make sick people well, and to maintain a community in good health, the medical student of modern times is being taught to regard his college as a place of research and specialization with the result that away from this institution he is helpless.

HAVE MEDICAL SCHOOLS OF THE PROFESSION, FOR THE PROFESSION AND BY THE PROFESSION

Medical schools owned and conducted by physicians are a thing of the past. The low grade medical college has all but disappeared. Standards of medical education have been raised till we can now boastingly say these standards are *high*. We felicitate ourselves. We congratulate the public.

Doctors turned out by our high grade medical schools must be *good*, but where are they? The actual number of physicians is practically standing still while the population is rapidly increasing. The supply of physicians no longer meets the demand. The medical schools turn away more students than they admit. The high cost of a medical education automatically bars out the poor boy. Family physicians, i. e., bedside doctors, are not being turned out by present day methods of medical education.

The state of Illinois has a medical college as an integral part of its state university. Many students hold free scholarships secured through political influence. Great numbers of well qualified students are turned away for lack of facilities to accommodate more than a comparatively

small number. The medical college is supported for the most part by public funds derived from taxes paid by the people of the state.

Medical schools are primarily for the converting of medical students into physicians. The tendency to replace physician teachers with Ph.D. school ma'ams, if continued, will make the family physician extinct. To give first place to research work is putting the cart before the horse.

Clinical instruction of medical students is now begun far too late in the course. Taking such instruction out of the hands of experienced physicians and placing it under "Ph.D.'s" or theoretical "M. D.'s" is but one step removed from doing away with clinical teaching. Medical education is now headed in that direction and the disastrous results are already apparent.

The medical profession as well as the rest of the population of the state is vitally interested in the College of Medicine of the State University. The people of this commonwealth want Doctors. They are in want of Doctors.

The people of the state are entitled to a medical school that is open to all students on terms of equality. The people are entitled to a medical school that will turn out general practitioners for the many rather than specialists for the few.

We hope to see medical education restored to the place where it will be under direction by real medical men—physicians who have the professional viewpoint. The experiment of full-time clinical teachers should be abolished, and that goes for three-quarter-time teachers as well. The state should not by any subterfuge place its salaried employes in competition with the rank and file of the profession.

The facilities of the medical school should be enlarged till the supply of physicians once more keeps pace with the growth in population.

IS THE PUBLIC HEALTH INSTITUTE OF CHICAGO TO BRANCH OUT INTO THE PRACTICE OF SURGERY?

That this corporation engaged in the practice of medicine expects to branch out into the practice of surgery is brought to the attention of Illinois physicians through a conversation held recently by a prominent Chicago doctor and an official of the notorious Public Health Institute.

The two men met casually. The Public Health Institute man did not know his companion was a doctor, nor did the doctor learn until the close of the interview the identity of his chance companion. Confidentially the Public Health Institute man remarked that he was going to establish a system of industrial surgery in New York City, with its beginning a series of first aid stations placed at intervals throughout the city. This application of "chain store methods" to the practice of medicine by a corporation of lay people will be as appalling as it is brazen, and is a direct attack upon the health welfare of the community.

Attention is called again to the fact that when a hearing was held at Springfield, Ill., before a Senate committee that had under consideration a bill prohibiting corporations from practicing medicine it was the opposition of a representative of the Public Health Institute that denied the medical profession and the public health this protection. Also that one of the backers of the Public Health Institute stated before the committee that the Public Health Institute would not go into specialties of medical practice other than the venereal.

YOUR DUTY TO VOTE

Every loyal physician whatever his political faith may be, should join in the effort to get out the vote at every election. This is necessary in order that the affairs of the state and nation shall be run by the majority rather than the minority which is the case at the present time.

Every citizen has not only the right, but also the duty of voting and the doctor especially should be looked up to as a participating citizen, for being a slacker in this matter must give rise to the suspicion that he is not fully informed in, or is culpably careless of his American heritage and his duty to his government obligations which should animate his every action.

Secretary of the Navy Wilbur, speaking before the Christian Endeavor in Pittsburgh on the intelligent use of the ballot, said:

A fundamental requisite of good citizenship in this country is to vote at every election, always to be counted on to be one of the Government. Don't leave it to others to run the Government. It is your Government. Its troubles are your troubles, and its defects belong to you. Don't roll over on your tongue as a choice morsel the subject of political corruption. . . . No party has a monopoly on honesty. There

are dishonest men who claim membership in every party, and seek to control its policies and hold political office by its suffrage. Honest men cannot make politics clean by staying out of politics and by demanding that dishonest politicians be put in jail.

And President Coolidge:

Popular Government is facing one of the difficult phases of the perpetual trial to which it always has been and always will be subjected. It needs the support of every element of patriotism, intelligence and capacity that can be summoned. I am much less concerned for what party, what policies and what candidates you vote than that you shall vote, and that your vote shall represent your conviction. When an enlightened electorate acts, I have no fear of the result.

A nation-wide "get-out-the-vote" campaign is now well on its way to success. Let the medical profession do its full duty towards putting the campaign over. Don't forget to register and vote on November 4.

REPUBLICAN OR DEMOCRAT—PHYSICIANS SHOULD TABOO PARTY POLITICS

Doctors should be more patriotic than partisan at elections. Doctors, like all others, should first of all vote as Americans passing upon the issues that come before the American people solely with regard to the question whether they served the highest aims and ideals of Americanism. It is possible that in some elections that party and patriotism may appeal to the same loyalty—this is especially true in national affairs. At other elections a strict party vote in some instances can be construed as nothing less than disloyalty to the public as well as to their own profession.

Protection of the health welfare of the people is the duty of the doctor. Medical men must stand together. The organized profession must have a clear cut platform on things medical and must not hesitate to back it whether it is unpalatable to either of the old parties and their candidates. In the new order of things there is no longer to be considered the question of party brand. The slogan for the future should be: DOES THE CANDIDATE STAND FOR RADICAL MEDICAL LEGISLATION WHICH IS ALWAYS UNAMERICAN, DESTRUCTIVE ALIKE TO THE INTEREST OF THE PEOPLE AND THE PROFESSION.

A candidate's views on national issues by no stretch of the imagination can be construed as fitting or unfitting him for office in a municipality or state or for membership in his respective legislature, but it is of vital importance to the people and the profession as to what views he holds on questions like the following:

State Medicine (medicine degraded);

Practice of medicine by corporations;

Practice of and dictation of medicine by laymen;

National socialization of medicine;

Compulsory health insurance;

Practice of medicine by the scientifically uneducated.

All these are issues that reach in every home in the land, issues that enter into the daily life of every man, woman and child and touch every human activity.

INVITATION TO AMERICAN PHYSICIANS

The Inter-State Post Graduate Assembly, directed by the Tri-State District Medical Association, extends a hearty invitation to the physicians of America who are in good standing in their State or Provincial Societies to attend the annual assembly, which is to be held at Milwaukee, Wisconsin, October 27th, 28th, 29th, 30th and 31st, five full days of post graduate work.

This Association is supervising an Inter-State Post Graduate Clinic Tour to Canada, British Isles and France to start May 18, 1925. Leading teachers and clinicians of Canada and Europe will arrange and conduct clinics and demonstrations in the following clinic cities:

Toronto and Montreal, Canada; London, Liverpool, Leeds, Manchester and Newcastle, England; Edinburgh and Glascow, Scotland; Dublin and Belfast, Ireland; Paris, Lyon and Strasburg, France.

Besides the main tour, special tours to practically all the leading centers of Europe will be arranged. Sight-seeing trips to all places of interest in the countries visited will be included in the regular tour.

Cost of tour, including first-class hotels, board, steamship, clinic arrangements and all ordinary traveling expenses, under $1,000.00.

The tour is open to physicians in good standing in their State Societies, their families and friends who are not physicians.

For information, write the Managing-Director, William B. Peck, Freeport, Illinois.

A WOMAN THE FIRST HEALTH COMMISSIONER OF ILLINOIS—1760

In the search for data for the History of Medical Practice of Illinois, the committee has run across much information that should incite a thrill for medical ears.

We publish below two interesting items pertaining to early medical practice in Illinois; one item details how in 1760 a woman became the first medical official in the state. The second how in 1766 the crown of England appointed a 'Doctor Annesley" to look after the health of the Indians. For this service the Doctor rendered a bill which shows that even in that day the pay of medical men was graded at a less value than that of mechanics and petty officers.

A WOMAN THE FIRST MEDICAL OFFICIAL

Oddly enough, Illinois' first Commissioner of Health, speaking approximately, was a woman, Mme. Beaulieu. She was, too, the pioneer woman physician in this country.

It might be assumed that the reign of priests as medical advisors terminates with the appointment of Madame Beaulieu,—an educated woman as Director General of Morals and Medical Matters,—by the settlers of Cahokia. Mme. Beaulieu was educated in Quebec, where she probably received instruction from Nuns who ran a dispensary and whose medical activities radiated to all points of the compass in the country under the French rule. Mme. Beaulieu's appointment was a curious combination of authority which might with propriety be called that of the "first Commissioner of Health." Just as our modern Boards of Health assume responsibility for checking the spread of venereal diseases, this lady sought to achieve a similar result by inculcating moral measures as a prevention of the curse of civilization. Just when Mme. Beaulieu assumed this office is not clear in the records. From her age we learn the time could not have been until the very close of the French period that terminated with the capture of Quebec by the British in 1760, and British occupancy of Illinois in 1765, for Mme. Beaulieu was born in 1742. Her father was one of the officers of the French troops that came to garrison at Ft. Chartres. He settled in Cahokia, where his daughter married M. Bealieu. Because of her devout life and her devotion to the moral uplift of the village, with a deep interest in medical matters, the office of "Director General of Morals and Medical Matters" was created for her. That Mme. Beaulieu practiced obstetrics extensively is gleaned from the writings of the Chronicler of the time, who states:

"She was doctress in most cases and Sage Femme General of many years." A remarkable woman she must have been, for in diseases of women it can be well surmised her services were much sought. Women would suffer in silence rather than confide matters of great delicacy to the priests, Mme. Bealieu's predecessors in the practice in the naked country. The services and influence of Mme. Bealieu extended well into the period of her successors in the practice, the regular physicians of the early part of the last century.

THE CROWN PAYS DR. ANNESLEY FOR MEDICAL SERVICES DURING BRITAIN'S REIGN IN ILLINOIS—1766

The superintendent of Indian affairs, reporting Sept. 25, 1766, sets forth a bill for medical services to the crown as follows:

"For attendance and medicines administered to the Indians at this place from the 25th of Sept., 1766—to this 24th March, 1767 inclusive, is 181 days: at 5/Pr Day: £45.5. Pensylv Currency at five Livres to the Dollar."

George Groghan, superintendent of Indian affairs, had appointed Dr. Annesley, so the crown sought verification of the bill through John Reed, March 25, 1767, at Ft. Chartres and received information that the appointment was made by the Deputy Superintendent of Indian affairs of the northern district and himself, and that the bill was just. In the same year Dr. Annesley acknowledges receipt of the sum of forty-five pounds, five shillings, Pennsylvania currency of five livres to the dollar from Edward Cole, Commissary of Indian Affairs at this place. That this was above the average pay for medical men in the good old days is apparent from the following:

INDIAN DEPARTMENT SALARIES AT FORTS ON FRONTIER

A Commissary	£200 sterling
A Gunsmith	£100 sterling
An Interpreter	£ 80 sterling
A Doctor	£ 80 sterling

The commandant adds in the King's worst English:

"The Gineral may think od of a Doctor being

wanted att Those posts. Butt its impossible to do without one att Fort Pitt as there is Such a vast Resort of Indians and Warr partys passing continuly by that post."

At the prevailing rate of $4.85 for each pound or less than $400 a year, doctors did not get rich in the service of the crown in the early days. But the crown was bent upon conquest, and gunsmiths in consequence were more important to the state and therefore received better remuneration than the guardians of the soldiers' health. In this list, as in our time, those engaged in intellectual pursuits were graded for less pay than mechanics and petty officers.

The above are examples of hundreds of other interesting steps in the growth of the Illinois country portraying doctors as the "trail-blazer" —telling of their work, their want, their heroism and courage down to the present day. Everything from the earliest period of medical practice in Illinois will be set down in the history of medical practice of Illinois, now being prepared by the committee on medical history under the sponsorship of the Illinois State Medical Society.

Sold on subscription. Order your copy now. Surely you will want to have in your medical library this written record of the work of your forebears.

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Progressive physicians, medical schools, hospitals, libraries, reference and statistical bureaus, and institutions of learning generally will want a copy of this volume as a concise, dependable authority for daily use. Unique, comprehensive, and a long wanted unit of historical value, this chronicle of Illinois progress is a record of work done for humanity by the profession. These annals are a bequest of value for posterity; an heirloom for the children, relatives and friends of former and present members of the Illinois State Medical Society.

ORDER YOUR COPY TODAY! DON'T LOSE OUT ON THIS!

HURRY ON DATA FOR MEDICAL HISTORY OF ILLINOIS

The time is rapidly approaching when data intended for the Medical History will have to be in the hands of the committee if it is to become a part of this tribute to the medical profession of Illinois.

A salient point to be borne in mind is that if this history is to be worthy of the work it aims to commemorate, it must be constructed coherently from the medical history of every community in the state. This means that every physician should pause long enough to supply the committee with what data he or she possesses or with information where such data may be procured. Sifting chaff from grain with chopsticks is ultra-easy in comparison with winnowing out the archives of the past. Annals of those sturdy pioneers are only partially found in libraries and court houses. By far the greater portion of desirable memoribilia is apt to be locked in garret chests and faded family albums and scrap books. Will every member of the Illinois State Medical Society make it a point to see that his community is in some way informed that this work is in progress and request for the history committee the loan of documents, pictures, or other mementoes that may be of interest or assistance?

This history can be made a very valuable ref-

erence work as well as a respectful tribute to those who laid the foundation of medical work in this state.

Coming from the past to the present it is the purpose of this record to trace the inside growth of the practice of medicine in Illinois and to present a bird's eye view of the gradual assembling of propaganda both inimical and friendly to the future of the science of medicine and the prophylaxis of a perfect sanitary service.

With the second largest city of the United States and one of the ten largest cities in the world situated in Illinois, and boasting one of the lowest death rates, thanks to this present excellent sanitary service, detailed account of the fight for good medicine in Illinois will prove of rare interest, even to the municipalities without the gates.

Data can be sent to any member of the committee. Receipt will be acknowledged and material will be returned.

To make this history, with the scores of inevitable details of interest to the profession, of value as a unit in the future annals of Illinois the work should list all officers of the society since its inception; epitomes of the accomplishments of each annual meeting; biographies of the founders; documentary memoriabilia of early years; decadal reports of organization activities, complete proceedings of the first session of the organization; financial status of the society; legislative activities, including administration of the medical practice act, code of ethics, malpractice defense, police duties of society; licensing of physicians; medical colleges and their aims; allied institutions such as hospitals, dispensaries and nursing schools; sanitary service from state and community boards of health to general public welfare endeavors; records of county and city medical societies; comparative chronological tables; portraits of founders of these spendid men who have carried the burdens of medical organizations and medical men for years without complaint; a reproduction of the historic charter—one of the oldest of the state—and what non-professional activities in the way of civic duty have been accomplished by busy and respected medical men of Illinois. Nor must be forgotten attempts at disruption of the society; its triumphant survival; the objectives for which it has striven since its founding, and, best of all, the note of optimism that will make easier the way of the medical man in generations to come.

That this note of optimism must be literal advice to "gird up the loins and enter the fray" will make it none the less a note of courage. Once a man knows where his enemy lies in ambush, first defense, and later, victory are assured.

Let it be repeated that every doctor in the state of Illinois who wants this history to be an honest record of the patient years and the self-sacrificing men and women whose deeds made possible the wealth of Illinois, should try to send in at least some small thing to make complete the book.

NOTE: The following are topics on which the Illinois State Medical Society, Committee on Medical History, desires information from you:

1ST PERIOD—From Discovery of Illinois to First Ante-Bellum Days.

(1) Early Medicine in Illinois.
  a. Healing from the days of the aborigines and mound-builders to the early French and English explorers. Relics, citations, pictures.

(2) Physicians and Pioneers.
  a. Ante-boundary days; sporadic settlers, medical attendance for the covered wagon; herb doctors; primitive surgery.
  b. Medicine and Missionaries.

(3) The Commonwealth Develops.
  a. Assertion of boundaries; pioneer doctors migrate to new territory.

(4) Days of the Circuit Rider.
  a. Saddlebag doctor, perils, triumphs, burdens.

(5) Forts, Physicians and Settlements.
  a. Government doctors.
  b. Crystallization of settlements.
  c. Fixation of physicians.

(6) Medical History in Early Metropolises of Illinois.
  (i. e., Galesburg, Lockport, Galena, East St. Louis, Belleville, Quincy, Peoria, Cairo et al.)

(7) County Societies.
  a. List and dates of founding.
  b. Achievements and history.

(8) Sanitary Science and the Pioneer.
  a. Early community restrictions.
  b. First health laws in villages.
  c. Early county laws of sanitation.
  d. Territorial control of health.

(9) Institution of Medical Schools.

(10) Establishment of Hospitals, Asylums and Infirmaries.

(11) Organization Illinois State Medical Society.

(12) Creation of County Societies.

(13) Early Epidemics.

(14) Early Medical Practice; the doctor as a utility citizen.

2ND PERIOD (From the Late Fifties to the Fin De Siecle Period of the Late 90's).

(1) Development of Medical Education.
  a. Extension colleges.
  b. Shift in commercial center of state to Chicago.
  c. Increased hospitalization.
  d. Humane care of insane.

(2) Inception and Growth of Cultism.
  From Voodoo to Abrams. Please enumerate any data of interest in regard to these continuous and varying charlatans.

(3) Medical Legislation Enacted.
  a. Medical Practice Act.
  b. Health laws.
    Establishment State Board of Health.
  c. Malpractice defense.
    Ad infinitum.

(4) State Sanitary Service.
  a. Drainage canal.
  b. Milk and water supervision et al.
  c. Food inspection.
  d. Contagious disease control.
  d. Veterinary sanitary control.
(5) Women in Medicine.
(6) Development of the Nursing Profession.
  a. Early Religious and missionary service.
  b. Nursing as a lay profession.
(7) Change in Medical Practice.
  a. Differentials from industrial progress.
  b. Results of advanced research.
  c. Sequalae of progressive sanitation.
(8) Progress of County Societies.
(9) Medical Journalism in Illinois.
  a. Official organ state society.
  b. Other medical journals.
    a—county.
    b—city.
    c—specialty.
    d—general.
(10) Financial.
(11) The Council and Its Activities.

3RD PERIOD—The New Century: From 1900 to Date.

(1) Shifting Therapeutics.
  a. Serum medication.
  b. Immunization.
  c. Vanishing diseases.
  d. Physical mediums from environment and diet to X-ray, radium, electro-therapy, etc.
(2) More Medical Legislation.
  a. General review.
  b. Federal, State and Municipal dictation and competitive medical practice.
  c. Lay Control of Medicine Practice.
(3) Sectionalism in Medicine.
  a. Absorption of homeopathy, electicism et al.
  b. Development of specialists.
(4) Outlook.

PRINCIPALLY PERSONAL.

(1) Society Founders.
(2) Chronological List of Society Officers.
(3) Orators and Lecturers for State Meetings.
(4) Portraits and Biographies.
(5) Documents.
(6) Medical Colleges—both defunct and active.
(7) Membership Statics.
(8) War and Illinois Doctors.
  a. The Revolutionary War.
  b. The War of 1812.
  c. The Mexican War.
  d. War of the Rebellion.
  e. The Indian Wars.
  f. Spanish-American War.
  g. World War.
(9) Medical Men Away from Medicine.
  a. In industry.
  b. In science.
  c. Belles-lettres, art, music, literature.

Cordially yours,
Medical History Committee,

ILLINOIS STATE MEDICAL SOCIETY.

O. B. Will, M. D., Peoria.
Charles B. Johnson, M. D., Champaign.
Carl E. Black, M. D., Jacksonville.
George A. Dicus, M. D., Streator.
James H. Hutton, M. D., Chicago.
Geo. H. Weaver, M. D., Chicago.
Lucius H. Zeuch, M. D., Chicago.
Charles J. Whalen, M. D., Chicago.

6244 N. Campbell Ave.,
Chicago, Illinois.

A NEW MEDICAL JOURNAL

The *Radiological Review* makes its bow to the public with Volume 1, Number 1, September-October, 1924, just off the press. It is a bi-monthly journal devoted to the progress of x-ray and radium as it relates to the practicing physician and dentist. It is published at Quincy, Illinois, by the Radiological Review Publishing Company. The *Journal* is devoted entirely to a new purpose in radiological science—the general practitioner's "informant" in the progress of radiology. The reason for the establishment of a new journal, the sponsors claim, is that the busy practitioner cannot afford time to read long technical articles in the leading journals devoted to this subject and that something had to be done to get information to the practicing physician in a brief but complete message.

We wish the *Radiological Review* all the success possible in their new undertaking.

WARNING

It has come to our attention that a promoter by the name of Everhart, under the name of the National Cancer Research Institute and Clinic has been using our names in connection with the promotion of an alleged cancer cure. We wish to warn all persons that no confidence should be placed in the promoter, the institute or the alleged cure under any representation in which our names are used, as they have been used entirely without our knowledge or consent.

M. L. Harris,
Daniel E. Murphy.

THE SMALL COLLEGE IS THE BEST

Mr. George Horace Lorimer in the *Saturday Evening Post* takes the position that the small college rather than a great university is the backbone of higher education in the United States. He says that there are two types of institutions broadly overlapping, but neither entirely covering the field of the other. His argument in favor of small colleges we quote as follows:—

In laying the foundations of a liberal education, in forming character by benign human contacts, in fitting the student for life itself rather than for the job that is but part of life, the small college stands without a rival.

The very limitations of the small institution preserve it from the danger of becoming unwieldy, top-heavy, or over-extended. What it lacks in plant it

makes up for in personnel. Its very smallness encourages individuality rather than standardization. The human contacts are closer. Men play a larger and freer part. They are not overwhelmed by rules, buildings, overwide choice of courses, complex social life and over-elaborate administration. There is as much to be said for the simple life in education as in the world at large. In all essentials, a college is merely a group of teachers and learners. A dozen young men gathered in a quiet shady place might be the kernel of an institution of the soundest learning, if only a Plato sat in their midst. . . .

Our Rockefellers and Bakers, and other public benefactors to be grouped in the same class, make a very short list; but for every man who can give a million without missing it, there are twenty who could give a hundred thousand with small inconvenience. We hazard the opinion that if these men would make a careful study of some of the smaller colleges, availing themselves of accurate information already gathered as to the quality of work they are doing, they could lay out their money just as shrewdly and beneficently as their bigger brothers in the hobby of giving.

THE TRUE PHYSICIAN AND HOW YOU MAY RECOGNIZE HIM

(Read, approved and ordered published by the Executive Committee of the California Medical Association.)

What doctor to call is a momentous question to ever-increasing numbers of people. It always has been a problem, but the many facilities stimulating the "wanderlust" spirit keep ever-growing numbers of people away from home friends and family doctors. The problem is also constantly being accentuated by the breaking down of laws and methods employed by state governments in placing their stamp of approval (license) upon those who treat the sick.

California, as "the world's playground," has an exceedingly large element of floating population. It is also quite well known as a state that puts its stamp of approval upon all sorts of cults and inadequately educated practitioners of healing.

Hundreds of appeals come to medical organizations, medical publications and other medical agencies from guests at hotels and transients of all classes, asking to be referred to a "reliable doctor." Obviously, medical organizations cannot give this information further than to show enquirers a list of members of medical societies and the staffs of good hospitals.

It is believed that intelligent persons will find little difficulty in selecting a competent physician themselves by measuring them by the following points:

WHAT CHARACTERIZES THE TRUE PHYSICIAN

1. His education is attested by the degree of "Doctor of Medicine" from some worthy institution of learning.

2. His moral, ethical and professional standing is attested by his membership in his county, state and national medical associations.

3. His standing as a man (or woman) and as a citizen is attested by precisely the same standards applicable to others.

4. His legal standing should be attested by his license to treat the sick. Unfortunately, this license means very little in many states, and in few it is more unreliable than in California.

5. The true physician never practices, never recognizes and never connubiates with those who do practice, sectarian or secular medicine, fads or cure-alls of any sort under any circumstances whatsoever.

6. He considers the patient rather than the disease, and he utilizes all proved knowledge and any or all proved methods in the treatment of his patients.

7. He recognizes that every patient—and every human being for that matter—needs advice calculated to avoid and prevent health dangers, correct existing troubles and prevent their repetition or progress.

8. He knows that the infirmities of the body, mind and soul are inseparably linked together so as to require all that science, art and personality can bring to bear in the patient's behalf. He renders what he can of these services and he delegates the others wisely.

9. He understands that no one person can know or practice to the best advantage all phases of the great field of medicine, and, therefore, whenever indicated and feasible, he asks other physicians for the assistance he needs.

10. He either maintains, or has contacts which insure, adequate consultation, laboratory, x-ray, nursing, hospital and all other services necessary for the welfare of his patients.

11. He follows the moral code of his profession, which insures confidential, sympathetic, consecrated service to his patients in such volume and at such times and in such places as are provided.

12. Like any other servant, he is entitled to a just compensation, but again he follows that provision of his ethics that entitles his patient to service at a compensation entirely consistent with his ability to pay.

13. He neither indulges in nor permits "personal puffery." When his name is seen in the public press, it is usually as the author of some dignified statement about the condition of some patient whose welfare is a matter of public concern. More rarely he may give an authorized interview or write an article for public information upon some health subject. He relies for the growth of his own clientele upon the influence of the ever-widening circle of those friends whom he has served.

14. If older and more experienced, he is ever extending the helping hand to the worthy younger men of his profession. And if a younger man, he is upholding the prestige of those already established. He is always interested in and helpful to worthy members of the ever-enlarging groups of assistants he must utilize to render the best to his patients.

15. He will admit that the best medical education is often inadequate, and he will endorse the statement of Hippocrates that "experience is fallacious and judgment difficult." But he feels that physicians are the

only persons even remotely prepared by education and training for leadership in matters pertaining to the improvement of health, the limitation of diseases, and the treatment of sick people.

16. He contributes, when he can, to medical literature; attends and takes an active part in medical society meetings; subscribes to and reads good medical journals; he thoroughly examines and carefully studies his patients, and he always makes written records of his findings. He is never boastful nor inclined to discuss his patients with others. He never guesses; when in doubt, he says so and invites consultation or assistance. He realizes his responsibilities and approaches his problems with the humility, seriousness and earnestness of purpose that ever characterizes the servant of God or of man and of science.—*California and Western Medicine*, July, 1924.

THE MATERNITY BONUS IN AUSTRALIA A FAILURE

The London correspondent of the A. M. A. Journal, in its February 18, 1924, issue, says:

One of the more socialistic provisions of the socialistic Insurance Act is the granting of a bonus on the birth of children in Australia, where a labor government is not a novelty. This has been done since 1912, the amount given being $25. When the proposal was first made, a deputation waited on the prime minister, Mr. Fisher, to ask that, instead of the bonus, arrangements should be made that every woman should have proper care and treatment during her confinement, but without success. It was thought at first that the bonus would be claimed only by those who were not well-to-do; but it is claimed by all women who give birth to children, irrespective of their financial position. For the year ending June, 1922, the amount paid in the Australian commonwealth amounted to $3,500,000 of which about $75,000 was spent in administration. Before the Victorian National Council for Women, a woman physician, Dr. Edith Barret, has read a paper, entitled, "Is the Motherhood of Australia Getting the Best Value from the Maternity Bonus?" and answers, "No." On its introduction, the supporters of the measure claimed that it would increase the birth rate, or at least arrest the decline, and diminish maternal and fetal mortality. But since the introduction of the bonus, the birth rate has steadily declined. Child-bearing has not been rendered any safer. The decline in infant mortality has been trivial, and cannot be traced to the bonus. The rates from 1914 to 1921 are 71.5, 67.5, 70.3, 55.8, 58.6, 69.2, 69.1 and 65.7. Dr. Barret recommends the introduction of maternity homes, as in New Zealand, where the costs work out about the same per labor as the bonus.

FANTASTIC SCHEMES FOR FORMULARIZING AND SOCIALIZING MEDICINE

(Read, approved and ordered published by the Executive Committee of the C. M. A.)

Physicians of Alameda County have been growing more and more restive over the elaborate methods developing there, which are calculated not only to produce a state of socialized medicine, but to reduce this great science to a formula and, in some instances, a code formula at that.

We are convinced that physicians, as well as other thinking citizens, have reason to be disturbed. This is not in the physicians' personal selfish interests, but in the name of the unknowing public, and particularly of the sick of the community. From a personal standpoint, more and more physicians are finding more and more to do in Oakland, a condition that is likely to expand rather than decrease, and for very obvious reasons. Friends of better medicine, including physicians, nurses, teachers, and private citizens, have been supplying California and Western Medicine with depressing data for some time about a scheme of things medical that should be labeled for what they are.

First, we will call attention to what its sponsors proudly designate the "Oakland method" of handling the health of school children. They do it by a "team method" to which there is no insufferable objection, provided the team is wisely selected, given all necessary facilities for good diagnostic work and sufficient time to do it in. The teams who are diagnosing diseases and otherwise practicing medicine among school children consist, according to a published statement, of:

"One doctor.
Four nurses.
One physical education director.
One optometrist.
Fourteen trained science pupils."

It is reported that one of these "teams" examine from 350 to 400 children a day, and record their findings. Just think of it! Imagine one doctor adequately examining even one-fifth of that number of persons in one day. *Yet, it is findings like these upon which parents rely to safeguard the health and lives of their children.* No wonder competent physicians are saying that some of their little patients about whose future they are most concerned are rated by school authorities as perfect, and others with definite diseases are diagnosed "undernutrition."

After one of these teams—and there are three of them—diagnoses the diseases and defects of 400 children in a portion of a day, the diseases and defects are put together in code on assorted colored school cards. For the information of the doctors? *No.* For the information of the teachers so that "the pupils' health record is always available to the teacher."

It is said that these non-medical persons are not practicing medicine within the meaning of the law because they employ only drugless methods of treatment, and they say that "you will notice that at no time has a diagnosis been made." This because they record diseases and defects by *code* numbers.

Listen to this:

"When each child's pink card reaches this (statistical) table, any number below a 9 is copied from the card onto the list in the corresponding space opposite the child's name. By this means a complete record is obtained of all suspected defects of the class. A deduction is made for anything marked below a 9.

For instance, a child is marked a 7 on teeth—clean, an 8 on posture, an 8 on nutrition, and all the rest 9. His total deduction is 4 (3 for every 6, 2 for every 7, and 1 for every 8). This figure is written on the pink card in a space provided, and also on the Classroom List opposite the child's name. The number of 6's, 7's, and 8's in the class is then added, as well as the number of deductions."

We assume that as soon as these statisticians become familiar with the modern method of selecting special cards by passing rods through cards with holes punched in them in certain manners, they will be able to elaborate their statistics and increase the variety of diagnoses without overworking the statistical department, whose figures furnish the basis for more and more publicity and propaganda. Just think of the speed with which one can practice medicine when all that is necessary to establish the child's grade of health is to run a rod through holes in cards!

Mothers and fathers of Oakland, and to a less extent elsewhere, will make serious mistakes if they accept and rely upon the findings of such hurried, unreliable and often otherwise incompetent data as a guide as to what to do about the health of their children. Diagnoses of diseases and defects are not made by such balderdash, and the earlier the general public finds it out the better for the health of their children.

There is an educated physician in Oakland for about each 600 people, including men, women, and children. They all have offices, hospital connections, and facilities for getting laboratory, x-ray and other assistance. Their ethics provide that they may serve for fees consistent with the patient's ability to pay, whether nothing, little, or much. If a patient doesn't believe in them, then he should go to his favorite species of quack; it is doubtful if many would believe in any quack enough to feel the security that they are asked to accept from the incompetent formularized diagnoses of disease made by the school health "teams." The leaders in this work emphasize the untruthful claim that their work is free to the rich and to the poor alike. This is not a fact; it is paid for by everyone who pays taxes. Even if it were free, it still may be the most expensive service of all unless it is checked up by a physician who does not stultify his own soul by trying to carefully examine 400 patients in one day. —*C. & W. Medicine.*

WHY THE QUACKS SUCCEED

NEWSPAPERS PRINT NOTHING IN CONTEMPT OF MOTHER EDDYISM

H. L. Mencken, in the May, 1924, issue of *American Mercury*, says:

The osteopaths, as they grow in prosperity and pretensions, greatly improve the technic of their propaganda. There was a time, and it was not so many years ago, when the publication of anything unfavorable to them in a newspaper—say the report of a practitioner landed in the hoosegow for attempting to treat smallpox by thumping the spine—brought a husky ex-wheelwright or former piano-mover to the office, hot to defend with his fists the science he had lately begun to adorn. But now they run to far more seemly and subtle devices. Dr. Fishbein's article in these pages last February was followed by no such invasion of Sandows and Jack Dempseys. Instead, there came a terrific avalanche of letters from literary osteopaths in all parts of the republic, many of them very well written, and all of them denouncing Fishbein as an agent of the Medical Trust and demanding space to answer his slanders and to expose the crimes of that octopus. No reply being made to these indigannt but usually very polite protests, there followed Round 2. Its technic was borrowed, not from the International Union of Stevedores and Longshoremen, but from the Church of Christ Scientist, an organization highly adept at alarming and working the public prints. It took the form of a second avalanche—this time from persons who represented themselves to be non-believers in the osteopathic sorcery, but who, nevertheless, loved justice and fair play so fondly that they could not see the osteopaths belabored without going to their defence. These mysterious correspondents, like the first set, demanded that *The American Mercury* be thrown open to the osteopaths, and that they be given a free license to expound their gospel at length. A connection between the two waves of attack being suspected, the second went without reply like the first, and so the matter rests.

A trivial episode, but not, perhaps, without its significance, for I incline to think that it explains the politeness with which the osteopaths have been treated of late in most of the daily newspapers. That politeness, in brief, is the result of good press work, and the good press work, as I have hinted, seems to have been borrowed from the Christian Scientists. In every city wherein Christian Science flourishes its high priests and medicine men maintain a sauve and persistent gentleman whose job it is to see that the local newspapers print nothing in contempt of the Eddyan magic. He is on watch day and night, seven days a week, and most of the managing editors of the land, having tasted his big stick at one time or another, are now exceedingly reluctant to stir him up. Within twelve hours after any reference to Christian Science gets into print that did not emanate from official quarters, he presents himself with a long typewritten rectification of its errors, and demands that it be printed. If the demand is refused, then the fun begins. The next day arrive several protests from writers who represent themselves to be old subscribers. The day following there are half a dozen telephone calls from local Babbitts, often eminent, all of whom explain carefully that they are not Eddyites themselves, but that it amazes and shocks them to see a reputable paper attacking and misrepresenting religion. The third day the managing editor is summoned to the office of the owner, and greeted with something like this:

In God's name, what have you been putting into the paper? My telephone has been ringing day and night for two whole days, and now my wife's aunt is camped

at my house, raising blue hell. She says that we are making fun of her religion, and breaking her heart. My daughter went to a bridge party today and was bawled out by an old harridan who wanted to pray for her. Can't you lay off such stuff? I missed the item myself, but it must have been awful. If you want to can the city editor, go ahead. I must get some sleep.

So next day there is printed a long article explaining solemnly that Mrs. Eddy was not a faith healer, that there is no connection whatever between Christian Science and the hocus-pocus of M. Coue, and that no Christian Science practitioner ever takes money for his assistance or pretends to do more than expound the authentic word and will of God—in other words, there appears the florid and effective press matter that the sauve and persistent gentleman has had in his pocket all the time, and so the Only True Revelation gets another excellent free advertisement, and a few more neurotic women appear at the tabernacle the Sunday following, vice those lost to the New Thought, laparotomy or the emblamer during the week. As I say, most managing editors have been bitten, and so most managing editors are now careful. It would be hard today to find six American newspapers that ever dare to mention Christian Science in their editorial columns without the most elaborate precautions. For newspaper editors are used to having the mob behind them; when they find a mob in front of them it almost always scares them stiff. The Christian Scientists maintain such a mob. It is small and polite, but extremely pertinacious and effective. It has a disconcerting way of including the owner's aunt, or the wife of an important advertiser, or even the wife of the managing editor himself. To flout it is to court trouble, and, in the long run, disaster. As I say, I suspect that the osteopaths have borrowed the trick and are working it to excellent effect. They have made money in recent years, and so yearn for dignity and good repute. They no longer turn ice-wagon drivers into doctors in six months; they have begun to adopt professional airs. With this pretension goes better press work.

But their fundamental pathological and therapeutic ideas, of course, remain nonsenical, and as such they will be represented, whenever they are mentioned at all, in the pages of this great moral journal. Whenever an osteopath grows intelligent he simply ceases to be an osteopath, and becomes an amateur physician of dubious equipment. So long as he is faithful to the teachings of Papa Still, the founder of the science, he remains an ignorant quack, and but little removed from his poor relation, the chiropractor. *The American Mercury* does not pretend to any austere judicial spirit in its dealings with such charlatans. It is frankly against them, as it is against fortune-tellers, communists, New Thoughters, Wilsonian idealists, dowsers, Kiwanians, Christian Scientists, Ku Kluxers, Prohibitionists and all other such dolts and swindlers. Its columns are no more open to their rantings against sense than they are open to the political drivel of Mr. Coolidge, the prospectuses of the sellers of Texas oil stock, or the advertisements of Peruna. This magazine, in brief, is not dedicated to such debates as go on in country barber-shops, Epworth League meeting rooms, and the smoking-cars of slow trains. It does not pretend to compete with the *Congressional Record*. It assumes that its readers are civilized, and that they are thus not partisans of any of the bizarre gospels which now engage one hundred per cent Americans, in all fields from aesthetics to obstetrics. It proposes, from time to time, to give them glimpses into these gospels, but not, certainly, with any notion that they are in danger of being converted. Its aim is to amuse them, not to insult them.

Thus the pussyfoots of the new evangels may as well take warning forthwith that no conceivable bombardment of protests and demands, however cunningly disguised as neutral and virtuous, will ever penetrate to these chaste pages. But to be anaesthetic to their lascivious approaches is one thing; to cherish the doctrine that they ought to be put down is quite another thing. Rather too much of that doctrine has been heard in the United States in late years. Until they grew strong enough to exert political power, the osteopaths, for example, were harassed in state after state, and even now, if I do not err, they are denied certain rights that all orthodox physicians, however incompetent, freely exercise, including the right to prescribe wines and liquors under the Volstead Act. Most of these harassments were directed by medical men, and not infrequently, I believe, they were inspired by nothing more enlightened than trade jealousy. The osteopaths were raking in the money of *Homo mousteriensis; ergo*, they were scoundrels, and the law must scotch them. The Christian Scientists, before they perfected their press department, went through the same bedevilment; to this day in the Maryland Free State, which boasts of its long and honorable record of toleration, it remains a misdemeanor for a Christian Science practitioner to accept a fee from a patient, and the prohibition has to be got around by the device of taking free-will offerings. Elsewhere there are constant attacks of the same sort upon fortune-tellers, layers on of hands, communists, Ku Kluxers, Holy Rollers, Negrophils, heroin addicts, cancer quacks, and a hundred and one other varieties of fanatics and mountebanks. Here the strange American ardor for passing laws, the insane belief in regulation and punishment, plays into the hands of the reformers, most of them quacks themselves. Their efforts, even when honest, seldom accomplish any appreciable good. The Harrison Act, despite its cruel provisions, has not diminished drug addiction in the slightest. The Mormons, after years of persecution, are still Mormons, and one of them is now a power in the Senate. Socialism in the United States was not laid by the Espionage Act; it was laid by the fact that the Socialists, during the war, got their fair share of the loot. Nor was the stately progress of osteopathy and chiropractic halted by the early efforts to put them down. Oppressive laws do not destroy minorities; they simply make bootleggers. The Christian Scientists bootleg their magic in Maryland as the Mormons bootleg their guinea-pig

theology in Utah and as the rum-runners bootleg alcohol everywhere.

When a free citizen comes down with cramps he has an inalienable right to send for an osteopath to roll him and thump him if he so desires, and as a necessary corollary the osteopath has a right to perform upon him as long as he can stand it and remain solvent. To argue to the contrary is to argue for the most vicious and idiotic sort of paternalism, and to open the way for unfair practices of the worst kind. But the Christian Scientist, when his child has cholera morbus, has at it with Mrs. Eddy's rubbish, and so sacrifices its life. What if he does? It is *his* child, and if it lived it would simply grow up into another Christian Scientist. There is evil, indeed, in every effort to relieve the stupid of the biological consequences of their stupidity. If the sort of yokels who now dose themselves with Swamp Root were deprived of it by law, and forced to consult the faculty of the Harvard Medical School when they were ill, what advantage would there be in being too intelligent to take Swamp Root? Nature, I believe, is against such interferences with its benign processes, and if they are persisted in it will take some frightful revenge. Luckily, they almost always fail. The Fathers of the Republic, as everyone knows, made the most elaborate efforts to protect its citizens against the just consequences of their own probable imbecility; a complex and apparently fool-proof system was contrived to keep them from putting inferior men into high office. Yet the Jackson revolt of the low orders was in full progress within a generation, and today the First Chief of the nation is Dr. Coolidge.

SOCIAL LEGISLATION

In a little volume, entitled "Social Legislation in Illinois," the social reform workers have summed up what they consider to be the needs of this state at the present time. Some of this legislation might be of benefit to the community at large; but, there is always the danger of injustice that attaches itself inevitably to class legislation. Those benevolent individuals, who become impressed with the evils that one class is suffering from, are too much inclined in their search for a remedy to inflict injustice upon other classes. If a free hand were given to these good people in obtaining the legislation sought for, the result would be intolerable for certain other classes and even, sometimes, for the whole community.

To hold the scales of justice evenly is not an easy matter to the best of us, and seems to be an impossibility to that considerable class of persons who regard it as their mission in life to compel others to think as they do. They become so engrossed with an idea that, for the time being, other equally important ideas are crowded out. The evils that these people are impressed with do undoubtedly exist; but, to remedy an evil by legislation, requires the direction of those who are in a position to have full knowledge of the subject in all its bearings. For reformers to legislate upon a matter in regard to which their knowledge must of necessity be second-hand, is fraught with danger.

For example, when laymen legislate on health matters against the views of the medical profession, the result is certain to be an injury to the community as well as an injustice to the profession. We have had two glaring examples of this in anti-narcotic and anti-alcoholic legislation. The evils complained of no doubt existed, but the net result has been, to interfere with and hamper the physician and to cause suffering to the patient, while the evil has not been abated but has, in fact, in some ways increased.

If banking laws were drafted and enforced by persons whose knowledge of banking is entirely theoretical, the result could scarcely fail to be disastrous to banking interests, and through them to the whole community. It is the same in matters pertaining to health. It is so absurd as to be all but incredible that physicians should be told by laymen (and laywomen) how they shall prescribe certain remedies. The principle is utterly wrong. When legislation affecting the medical profession and the public health is proposed, the profession is always ready to consider every side of the question, but it claims the right to be heard and to have its own views considered as their importance deserves.

Unfortunately, that is not the way it is usually done. If the views of medical men had received proper consideration before the Harrison anti-narcotic law was passed, we are convinced that it could have been made more effective in dealing with the evils aimed at and, at the same time, less oppressive to medical men and their patients.

To put the matter in a nutshell, the narcotic habit is a disease, and laymen are compelling doctors to treat it as they (the laymen) think it should be treated. In other words, those who know nothing of a science are presuming to dictate to those who have made it a life study. Could anything be more absurd?

In the matter of health insurance, state medicine, health centers, or whatever name may be employed to express different forms of the same idea, there is the same fundamental error. It is based upon erroneous views and mistaken premises. It is *not* a progress in civilized state life, but is reactionary, in that it emphasizes paternal government, which is not the same as centralized government. The latter is necessary for certain phases of community life; the former is a retrograde step under any conditions.

Perhaps the worst feature of paternalistic government is, that it encourages indolence. For example, in the matter of old age insurance and employment insurance; when people find that a paternal government will provide for them, if they do not provide for themselves, it is quite natural that many of them will let the government do it. We have just had an example in England. While the social reformers were praising the success of the law granting an allowance to the unemployed, the cable brought the news that, in

wages of those at work. Could anything be more demoralizing?

No, human nature is not yet sufficiently altruistic, or, rather, not yet sufficiently honest to make such a law workable. If idleness pays better than work, then why work? A very large proportion of the people are still so undeveloped morally that, just as soon as they feel certain that they will be cared for in old age, they say: "Why should I deny myself in order to save for a rainy day? Why not enjoy my money as fast as I earn it? I shall not be allowed to suffer. I should worry!"

We have always as many of the unfortunate poor as we can take care of without adding to their numbers by putting a premium on improvidence and lack of thrift. Who will save against old age if he knows that it is not necessary?

Another principle is ignored in much of the proposed social legislation, both state and national. In a land of true liberty, there can be no interference with the right of the individual to choose his own medical adviser, nor with the right of the physician to prescribe as he sees fit. The only exception to this rule is in cases of certain contagious diseases where the necessity of quarantine is involved or in prescribing for criminal purposes.

A bill recently passed in Congress, which received the support of the President, violates this principle. It inflicts a wrong upon the medical profession as well as upon the public. Every citizen is taxed for the purpose of maintaining another government bureau to dictate to the citizen in one of the most distinctly personal phases of life—that of maternity. The Sheppard-Towner bill is so awful a bit of legislation that it is difficult to conceive how any level-headed Americans could have seriously proposed and supported it.

This problem of legislation involves many difficulties, but, one point seems clear: We must in some way wake up the interest of the rank and file of our profession to the threatened dangers. There is no substitute for watchfulness. Too many of us are quite unconcerned until it is too late.

We must have representative men of energy and ability to watch legislation, both at Washington and at the state capitals, who can give warning when action of any sort by the profession is needed, and these warnings should go to all doctors whether members of the societies or not. A powerful influence for good would be exerted if every doctor in the land were to write to the legislators from his district whenever health legislation was proposed, giving his views briefly and temperately. We must never forget for a moment that the interests working against us maintain active lobbies well supplied with funds. They can never be accused of indifference, while we, unfortunately, can. We need to wake up and keep awake.—*Clinical Medicine.*

WHY THE INCREASE IN TWIN BIRTHS?

The Paris correspondent of the *American Medical Association Journal*, under date of August 8, 1924, says:

Recently Professor Cristalli of Naples called attention to the surprising increase in the number of multiple births occurring at Naples during and since the war. Is this phenomenon sporadic, or at least confined to the Italian peninsula; or is it, as Cristalli seems to suppose, a general finding observed in all the countries that took part in the World War? Dr. P. Balard, obstetrician to the hospitals of Bordeaux, has endeavored to establish the truth with reference to that city by collecting statistics on the number of twin births that have occurred there during the last ten years.

Twin Births Occurring in Bordeaux, 1913-1923

Years	Twin Births	Total Births	Twin Births per 1,000 Births
1913	7	4,201	1.66
1914	22	4,130	5.32
1915	17	3,179	5.34
1916	23	3,019	7.61
1917	22	3,711	5.92
1918	18	3,915	4.59
1919	26	4,092	6.35
1920	39	5,944	6.56
1921	37	5,655	6.54
1922	32	5,021	6.37
1923	37	4,875	7.58

1913, there were, quite regularly, around six twin births per thousand births. At Naples, however, the proportion, which was about three before the war, rose steadily to 8, 9, 12, 17, 26 and 29 per thousand births.

To what cause or causes may this difference be ascribed? In explanation of the remarkable increase in the number of twin births at Naples, Cristalli refers to the changes in the family life during and after the war—the privations to which the women were subjected; the different nature of the food, with its progressive and lasting reaction on organic metabolism, since it is an established fact that the birth rate is in inverse proportion to the degree of well-being that characterizes a given social group, as if Nature tended to reestablish the demographic equilibrium and to preserve the race among poor people with an unusually high infant mortality. It may well be asked to what extent this interpretation seems to hold good. Balard notes that, in Cristalli's statistics, it is especially since 1918, and particularly in 1920 and 1921, that the number of twin births is exceptionally high. It would seem that by that time the influence of war restrictions would have ceased to be felt. Cristalli takes no account of the possible influence of syphilis on twin births. Leaving this factor out of account, it would seem, if we accept the theory advanced by Cristalli, that the twin births must have remained practically stationary in most parts of France as they did at Bordeaux, for at no time during the war did French women have to undergo such food privations as would have any appreciable effect on their metabolism.

BIRTH CONTROL: AN UNSOLVED PROBLEM

Morris Fishbein, M. D., in *American Mercury*, says: In his presidential address before the American Medical Association last June, Dr. William Allen Pusey devoted himself to the subject of the limitation of population, and brought to the support of an argument for birth control most of the familiar facts about the impossibility of supporting the population of the

future on the land of the present. "If no effort is made at birth control," said Doctor Pusey, "nature will take charge of the situation by eliminating those less able to resist." Continuing his argument, he cited the contention of the economists that those people inherit the earth who multiply most rapidly, and that fecundity increases inversely according to the individual's position in the social scale. It seemed to him, as it has seemed to others, that this means the downfall of modern Christian civilization, with the triumph of the misery and degradation of Asia. "I particularly desire," he concluded, "that the mistaken impression should not go out that I mean to say that medicine now has any satisfactory program for birth control. It has not."

In the tomes of the ardent economists, biologists, sociologists and philosophers who favor birth control the eager reader will also search futilely for any practical program, or, indeed, for any practical method. His disappointment will not, moreover, depend entirely on the fact that our government, either wisely or unwisely, has made unlawful the dissemination of such knowledge as is available. The fact is that none of the students of the problem, not even the physicians, have ever perfected any method of birth control that is physiologically, psychologically and biologically sound in both principle and practice. Not, of course, that devices for the prevention of conception do not exist; it is well known that they do, and that they are easily available to almost any purchaser in any drug store in America. The difficulty lies primarily in the imperfection of the devices themselves, and in the peculiar psychology of that lower stratum of society which the birth control enthusiasts insists must be brought to the light, lest its descendants inherit the earth.

Every practical psychologist knows that such folk are not at all interested in the welfare of the United States as it may be one hundred years from now. The desire to plan for posterity—and that posterity not of the next succeeding generation, but of four generations ahead—connotes a high order of intelligence and public spirit. The impulse to sacrifice the pleasure of the moment for the profit of a far-removed future is within the moral scope, and always will be, of very few men, and perhaps of an even smaller number of women.

But more important than this lack of altruistic imagination is the lack of any sure device for birth control. Of all those at present available, the most ancient and most certain of all is that of simple continence. The chaste man or woman, obviously, never has a child. It is the contention of many religious and prudish persons that this continence is the only aid to the limitation of offspring that is approved by moral law. It is, on the other hand, the belief of most modern psychologists, and especially of the Freudians, that absolute continence in the presence of continuous temptation, such as must inevitably appear in the case of marriage between two persons who have for each other a profound affection, produces effects on the mental life and the daily behavior that are not conducive to a peaceful and healthful existence. Continence is hardly likely, therefore, to appeal to the more intelligent members of the community. And it is only by the more intelligent members of the community that one may expect it to be practiced at all! The visible result of its impracticability among less reflective persons is apparent in the very fecundity which Doctor Pusey deplored. Even recognizing the fact that the long and piteous documents from working women printed in Mrs. Margaret Sanger's *Birth Control Review* are especially selected because they are long and piteous, they may be considered nevertheless as evidence that continence does not work among the poor.

As everyone knows, there are short periods in the life of a woman, recurring regularly, in which the likelihood of conception is less than at other times. These are, however, so indeterminate, and the modifying factors are so many, that those who have attempted to rely on them to limit their offspring have been invariably surprised at their failure. All the remaining methods now in use are mechanical and chemical. Do they work? Recently the best authorities available in Great Britain conducted a symposium on the subject. It was the general verdict that all were unsatisfactory, although a majority agreed that a commonly known device, invented some centuries ago by an Italian named Fallopius, was better than the rest. The percentage of efficiency of the latter varies from ten to somewhere about ninety per cent; none of them is perfect. Moreover, some of them may produce irritations of the tissues and grave consequences, including cancer. Little need be said here of their psychological effects.

One of the difficulties of arriving at a satisfactory formula for killing any sort of organism within the human body lies in the fact that any solution that is sufficiently strong to kill it is also sufficiently strong to irritate and destroy the living body cells. So with all the chemical substances thus far proposed for destroying or inhibiting the activity of either the ovum of the female or the sperm of the male. Practically all such substances are subject to the charge that they are too weak to be efficient, or so strong as to be distinctly injurious to the tissues, especially if used frequently. On such devices there is never any agreement. Each of the chief advocates of birth control has some method which he or she considers the ideal. But the fact that Mrs. Sanger, Mrs. Stopes, Miss Rout and Miss Bocker do not agree should be sufficient evidence in itself that the ideal has not been reached.

Little is said by such propagandists about the psychological aspect of birth control, but this is obviously a matter of the greatest importance. The psychological factor, indeed, is largely responsible, not only for the frequent failure of all the common devices when applied under even the best of conditions, but also for the reluctance to utilize them, imperfect as they are, in the lower ranks of society. It would be possible here, if this were a popular, rather than a scientific, consideration of the subject, to picture a nocturnal scene between a male of the lower stratum, somewhat

stimulated by alcohol, and the feminine partner of his misery, weary after a day at the washtub or scrubbing the halls of an apartment house. The mental states of the two, it must be plain, are hardly such as to lead them to pause for a consideration of their own difficulties, much less of the economic problems of the Twenty-first Century. The stimulated emotions of the male, coupled with the fatigued inhibitions of the female, are little likely to encourage a recourse to complex mechanisms in the name of humanity.

Medical science is not yet satisfied with the achievements of its investigators in this field. Research workers are still seeking methods which are scientifically safe and psychologically satisfactory. The two devices to which most attention is being given at this time involve the use of the x-rays and of the biologic process involved in the creation of immunity. It has been shown that exposure of the ovary in the female or of the testis in the male to a sufficient dosage of x-rays results in atrophy or deterioration of the tissues, and so causes permanent sterility. But the human tissues vary so greatly in resistance and the dosage of x-rays sufficient to produce the required effect without also producing other and much more harmful effects is so difficult to calculate, that the method is not as yet practical.

The other method has been the outgrowth of experiments by such investigators as Guyer, Dittler, Metchnikoff and McCartney. A proper understanding of it involves a knowledge of the biologic mechanism within the human body which results in the production of immunity to disease. It is known that a person who is infected with certain diseases develops resistance to future infection with those diseases by the creation within his body of antagonistic substances. In the same way, the injection into the body of certain chemical substances causes it to build up a defense against them. It therefore occurred to the investigators named to find out whether or not the female organism might be immunized against the sperm cell of the male. They were supported in their belief that it might be so immunized by observations which seemed to indicate that the female tended in time, under the ordinary process of exposure, to develop immunity to the male sperm. It is known, for instance, that the liability to become pregnant is much more greater during the early years of marriage than in the later years. It is known also that there is little tendency to become pregnant among prostitutes, and that this fact is not altogether the result of the chronic venereal infecions to which this class is subject. Finally, it was observed that there was a subonrmal tendency to pregnancy in periods following unusually frequent exposure.

The investigators prepared extracts and other preparations of the sperm cells of various animals, such as rabbits, albino rats and chickens. These were injected into females and careful observations were made to determine whether or not they had any effect on fecundity. It was found that a definite effect did appear. Female albino rats injected with the sperm of the male remained sterile for a period of from two to twenty-two weeks beyond the normal gestation time, although their normal sexual cycle and behavior seemed to be in no way altered. These experiments were carefully controlled by injecting an equal number of rats with salt solution or other innocuous material.

Obviously, if science is able to develop some such method as this, which will permit the production of sterility in individuals of the lower stratum with their own consent, which will be renewable after a definite period, and which will not depend for its effectiveness on any mental or physical action of the persons concerned at the time of sexual activity, a feasible method of birth control will have been found. But certainly we cannot be said, as yet, to have reached any such method.

CHANGES IN SEX MORALITY AMONG WOMEN

The *Journal of Social Hygiene* has an article on the "Changes in Sex Morality Among Women":

Has the wider acceptance of the single standard of morals brought with it a greater degree of chastity among men or has it meant largely a loosening of the stricter code of sex morality formerly applied to women? Many recent writers incline to the latter view, even those who agree that the slogan "Down with the double standard" was intended at first to signify a raising of the male, rather than a revolutionary changing of the female standard. In *Current History* (November, 1923) Alyse Gregory, writing on "The Changing Morality of Women," calls this looser moral attitude in women "a state of affairs the existence of which can no longer be denied." She traces standards through the Middle Ages and the Victorian Era and, after describing changes brought about through the invention of machinery, she closes her discussion with a few paragraphs on the effect of the war and on the "more tolerant standards" now prevailing. Of the after-war period down to and including the present, the author says, "However unwilling one may be to acknowledge it, girls began to sow their wild oats. Women of the aristocratic upper classes and the poorest women had never followed too rigidly the cast-iron rules of respectability because in neither instance had they anything to lose by digressing. But for the first time in memory of man, girls from well-bred respectable families of the middle class broke through those invisible chains of custom and asserted their right to a nonchalant, self-sustaining life of their own with a cigarette after every meal and a lover in the evening to wander about with and lend color to life. If the relationship became more intimate than such relationships are supposed to be, there was nothing to be lost that a girl could not well dispense with. Her employer asked no questions as to her life outside the office. She had her own salary at the end of the month and asked no other recompense from her lover than his love and companionship. Into the privacy of her own snug and pleasant rooms not even her mother or brother could penetrate, for she and she alone, unless perhaps one other, carried the only key that would fit the lock."

That this picture is a limited one, however, she now admits, and one of her conclusions is that many, even those who now revel in the new fredom, will find marrying worth while. This is not to imply that over vast stretches of the United States, and certainly in the small towns and villages, young girls and women in bourgeoise homes are not living lives of impeccable chastity, but in the great cities, in those circles where women from twenty-five to thirty-five can control their own purse strings, many of them are apt to drift into casual or steady relationships with certain men friends, which may or may not end in matrimony. Undoubtedly in time these men and women will rediscover that monogamy has after all its many advantages, but it is unlikely that the western world will ever again ask of women that strictness in behavior which it has never demanded from men. On the other hand, certain unfair privileges still accorded her under the law, will undoubtedly be changed, as will those laws which discriminate against her.

ARSPHENAMINE VS. NEOARSPHENAMINE.

Raiziss, et al., in *Clinical Medicine,* recognize that on the question of choice between arsphenamine and one of its derivatives there is a difference of opinion. The chief determining factors should be the chemotherapeutic index (relation of maximum tolerated dose to minimum therapeutic dose) of the particular drug employed and the manner in which this drug is clinically tolerated. On this basis, in our estimation, neoarsphenamine is to be preferred. A single dose of 0.9 gm. neoarsphenamine is generally considered the therapeutic equivalent of 0.6 gm. of arsphenamine—the latter, however, being two to three times as toxic as the former. Arsphenamine contains about 30 per cent arsenic while neoarsphenamine contains about 20 per cent. All things being equal, we believe that therapeutic agents with decreased arsenical contents are more desirable. Although comparisons of the drug effects, in parallel stages of syphillis over a given period, have indicated that neoarsphenamine necessitates generally a third again as many treatments as arsphenamine, there is this compensation: there is much less likelihood of toxic disturbance, and treatment in many cases may be prolonged—a thing admitting of more satisfactory end—results. Again, the chemotherapeutic index of neoarsphenamine, due to improvement in its manufacture, has been increasing and is considerably higher than that or arsphenamine. Thus, because the newer arsenical is less toxic and therefore less likely to produce reactions, and also because the technic of its administration is simpler, physicians throughout the world are using more neoarsphenamine than arsphenamine. There are, however, some prominent syphilologists who believe arsphenamine to be more efficient than neoarsphenamine and therefore prefer to employ it, in spite of its admittedly higher toxicity.

The advantages of neoarsphenamine may therefore be summed up as follows:

1. It is a neutral compound possessing about the same hydrogen-ion concentration as the blood. Its injection into the blood stream, therefore, causes less biochemical disturbance, both in the blood and tissues, than the strongly alkaline solution of arsphenamine, the hydrogen-ion concentration of which is different from that of the blood.

2. Neoarsphenamine in the ordinary concentrations employed is not hemolytic, except in very dilute solutions or in extremely concentrated solutions, while arsphenamine is hemolytic in virtually all concentrations in which it is used.

3. Neoarsphenamine is more rapidly soluble and may be used in much greater concentration; consequently, the solution may be given in a glass syringe. Arsphenamine, on the other hand, is given from a burette by the gravity method. The preparation, too, and the technic are much less elaborate in neoarsphenamine and the possibility of error, therefore, is less.

4. Neoarsphenamine, experience demonstrates, is tolerated by the patient much better than arsphenamine. Reactions are both rarer and milder, when they do occur, and, consequently, interruption of treatment is less likely.

5. Neorsphenamine is almost invariably preferred by the patient, since there is less pain, less trauma (finer needle), risk, reaction and time consumed.

The newer methods of treating syphillis have been employed little more than a decade. Sufficient time has not elapsed for the development of a crystallized therapeutic program acceptable to the great majority of sphilographers. The selection of the remedy, the dosage, the frequency of administration, the number of treatments in a course, the number of courses, etc., are all matters determined by the physician for

himself. Certain general propositions, however, have been suggested by those who have had the widest experience in the treatment of syphilis.

ACCIDENT FROM X RAY RAISES NO PRESUMPTION OF NEGLIGENCE

The Pennsylvania Supreme Court holds, Nixon v. Pfahler, 124 Atl. 130, that the rule that an action against a physician for malpractice can be sustained only by proof of his negligence, and that the burden of such proof rests upon him who asserts it, is not changed because the practitioner uses an x ray instrument. The plaintiff, while having x ray photographs taken of her teeth in defendant's offices, was injured by an electric spark which struck her right knee and passed down and out at her foot. What caused the electric current to leap from the wire through the air to the patient's leg, as it seemed to have done, was unknown, and there was no evidence that such an accident could have been anticipated, or that it resulted from any fault of defendant.

"The x ray machine," the court said, "is indispensable to the healing art, and the mere happening of an accident from its use creates no presumption against the instrument or its operation. It is necessary for those engaged in the medical profession constantly to employ dangerous agencies, like electricity, radium, surgical instruments, poison, anesthetics, etc., and if prima facie liability attaches for an accident resulting from the use of one, logically it should from the use of any other, and the practitioner employing such would be practically an insurer of the safety of his patients, which the law declares he is not. The question of liability does not hinge upon the dangerous character of the agency employed, but upon the manner of its use, as to which the presumption of due care is in favor of the practitioner, until overcome by evidence to the contrary."

ANESTHETIST NOT LIABLE FOR CARELESSNESS IN OPERATION

The Kentucky Court of Appeals holds, Jett v. Linville, 259 S. W., 43, that, since it is a well established rule in surgical operations that the anesthetist is directly chargeable with the physical condition of the patient in the operating room, and his attention must always be directed solely to administering the proper amount of the anesthetic and continuing its supply in just such proportions as will insure the patient's remaining in a comatose condition while the knife is being used, he cannot be held responsible for any alleged carelessness in the operation, in which he did not take part.

MEDICOLEGAL AND OBSTETRICAL OBSERVATIONS ON SCOPOLAMINE ANESTHESIA

House (*American Journal of Surgery*, October, 1923) holds that morphine inhibits the progress of scopolamine anesthesia in obstetrics. The former drug is entirely unnecessary, and indeed is contraindicated when combined with scopolamine. The method of administration of scopolamine is as follows and is described as the Florence-Rosser method:

When dilatation is manifested gr. 1/130 scopolamine plus apomorphine gr. 1/50 to 1/60 are given. If pains are fast, wait for the duration of fifteen minutes; if pains are slow, wait twenty or thirty minutes to inject scopolamine gr. 1/200. Chloroform is then administered, the patient being directed to count during inhalations, which are continued until the patient can no longer count. When the chloroform is removed the patient passes into the stage called amnesia. If the stage of amnesia is not satisfactory the chloroform is again administered and the patient asked to count. The number reached tells the condition of the mind and guides the selection of the next dose of scopolamine.

The small amount of choloform required and the intervals between its use makes it a minor issue. The baby will be as drowsy as the mother. To prevent the blue baby one-eightieth of a grain of strychnine sulphate is injected into the abdominal muscles of the expectant mother five minutes before delivery is anticipated. When the head passes over the perineum a few inhalations of chloroform are again given. Scopolamine gr. 1/60 is the limit of safety.

OUR OWN BODIES

"You know the model of your car;
You know just what its powers are.
You treat it with a deal of care
Nor tax it more than it can bear.
But as to self—that's different;
Your mechanism may be bent,
Your carburetor gone to grass,
Your engine just a rusty mass.

Your wheels may wobble, and your cogs
Be hauled over to the dogs.
And you skip and skid and slide
Without a thought of things inside.
What fools, indeed, we mortals are
To lavish care upon a car
With ne'er a bit of time to see
About our own machinery!"

—*John Kendrick Bangs.*

NOT IN THE THREE HUNDRED CLASS

Pædaretus, when he was not elected to be one of the three hendred (which was the highest honor and office in the city), went away cheerfully and smiling, saying he was glad if the city had three hundred better citizens than himself.—*Plutarch.*

LEARNING TO MILK THE COW

Farmer: "Now, come along and I'll teach you to milk the cow."

Cockney Hand: "Seein' I'm new to it, Mister, hadn't I better learn on the calf?"—*London Opinion.*

Original Articles

THE DIAGNOSIS AND TREATMENT OF CHRONIC OR LATENT TONSILLITIS

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Chronic or latent tonsillitis frequently occurs in association with chronic infection of the roots of devitalized teeth, pyorrhea, or sinusitis. Although acute tonsillitis occurs more frequently in the young, the systemic manifestations of chronic or latent or tonsillar infection are more usually observed at or after middle age.

Chronic or latent tonsillitis may exist twenty or more years and may, for certain periods, be absolutely local, with no systemic manifestation. Frequently these periods are not truly local, but are latent, as toxins or micro-organisms are entering the blood without producing diagnostic symptoms. These periods of latency alternate with periods of obvious systemic infection.

Latent tonsillar infection is very apt to become active when any intercurrent infection or disease occurs, such as influenza, typhoid fever, pneumonia, diabetes, cardias or renal decompensation or any condition that reduces the defense system of the body, such as malnutrition. Perhaps the commonest of all causes is an intercurrent infection.

The tonsils may be considerably or moderately hypertrophied, small in size or buried. The anterior and posterior pillars are frequently adherent to the tonsil and the anterior surface of the anterior pillars often present a dark red, congested appearance.

When infected tonsils are subjected to pressure, some yield no secretions, others show a cheesy or thin milk-like fluid which, when cultured, usually reveals the streptococcus hemolyticus or viridans. The crypts are frequently dilated, and when emptied, and material secured from the bottom by a platinum loop is cultured, the streptococcus hemolyticus or viridans may be obtained in pure culture. Similar organisms may be obtained from the surface of the tonsils, from the bottom of the spaces between the tonsils and the anterior and the posterior pillars. The pathogenicity and specificity of these organisms may be determined by animal experimentation. The blood serum on examination may show varying degrees of immunity or susceptibility to the infective organism. Hemolytic streptococci have been found in the enlarged lingual tonsils and in diseased glands in the posterior walls of the pharynx. A negatve culture may be due to the closure of crypts by adhesive inflammation or because the infection is a circubscribed intra or retro-tonsillar abscess.

The small, buried, fibrotic tonsil may give no evidence of infection, and the diagnosis of its infectivity may rest entirely upon the exclusion of all other foci or infection, together with the clinical and leucocytic manifestations of systemic infection. Occasionally the only diagnostic sign is lymphocytosis, poly-nuclear decrease and leukopenia. Infected tonsillar tissue remaining after a tonsillectomy, even though no larger than a split pea, or unremoved infected glandular tissue in the region of the plica triangularis, may produce the same clinical manifestations as an infected tonsil.

Usually, chronic or latent tonsillar infection gives a history of one or more attacks of acute tonsillitis, although occasionally no such history is obtainable, either because the infection was chronic from the beginning or the patient has forgotten that an acute attack had occurred. When the tonsil is infected by contiguity from pyorrhea, around the third lower molar, or the patient may suffer no attack of acute tonsillitis. Whenever possible, tonsillectomy should be performed after the removal of pyorrhea or sinusitis. As a rule, when recurrent acute tonsillitis has occurred, even though twenty years has elapsed since the last attack, the tonsils should be suspected of being infected until proven innocent.

The presence of enlarged, indurated and painless cervical glands aids in diagnosing chronic or latent tonsillar infection, but they may be so situated as not to be detected by palpation. The most common clinical manifestations of chronic or latent tonsillar infection, more or less, in the order of frequency, are arthritis, periostitis, tenosynovitis, myositis, chronic myocarditis, endo or pericarditis, endarteritis, neurasthenia, psychoneurasthenia, psychoses, neuritis, cholecystitis, cholelithiasis, hepatitis, hepatic insufficiency, intestinal toxemia, nephritis, pyelonephritis, renal calculus, peptic ulcer, and infective processes involving the eye, ear, skin, respiratory or genital

*Read before the annual assembly of the Tri-State District Medical Association which was held at Des Moines, Iowa, Oct. 29, 30, 31 and Nov. 1, 1923.

organs. When a vital organ is involved, such as the heart and kidneys, and reasonable clinical evidence exists that it is infective in origin, more especially if the polynuclear cells are decreased, with lymphocytosis and leucopenia, and no other focus of infection is discoverable, the tonsils may be removed on suspicion. A pathological and bacteriological examination of the excised tonsils will establish the correctness or incorrectness of the procedure.

In more than one-half of the cases of chronic tonsillar infection, there is a well marked increase of the small lymphocytes, a corresponding decrease in the polymorphonuclear cells, and a decrease in the number of leucocytes per c. m. m. Anemia or chloroanemia usually coexists. This diagnostic picture may be the chief or only evidence of chronic or latent tonsillar infection, and indicates that toxins or micro-organisms or both are entering the blood. If this diagnostic blood picture permanently disappears after tonsillectomy, it proves that all infection has been removed; if, however, it returns after a temporary absence, it proves that a focus of infection still exists.

The following is an abstract of a typical case of chronic tonsillar infection illustrating the difficulty of diagnosis: Maiden lady, aged 70, weight 81 pounds; marked asthenia, chloroanemia, relieved by removal of dental foci of infection. A few months later, symptoms recurred. Tonsils small, buried, and almost invisible, and a laryngologist stated they were normal. No history of previous disease of the tonsils. As the differential leucocyte count showed lymphocytosis, a moderate polynuclear decrease and leukopenia, infection was believed to be present, and as no other focus of infection could be discovered, the tonsils were removed on suspicion, and showed haemolytic streptococci. The patient's recovery was solely due to the recognition of the diagnostic importance of lymphocytosis, polymorphonuclear decrease and leukopenia.*

THE TREATMENT OF CHRONIC TONSILLAR INFECTION OR REMNANT IS COMPLETE SURGICAL REMOVAL

In inoperable cases of infected tonsils, the septa of the crypts may be divided so as to favor drainage. Any antiseptic, such as iodine or Dakin's solution, may be employed to irrigate the crypts after they have been thoroughly emptied by compressed air or liquid. The x-ray properly applied, in proper doses, at proper intervals, sometimes causes a reduction in the size of the diseased tonsils and may reduce infectivity, and should be employed in conjunction with local treatment.

A properly made autogenous vaccine is of value in the senile, the debilitated, and those in whom resistance is lowered from any cause. In healthy, young adults, with no complication, vaccines are usually unnecessary.

Summary of the diagnostic evidence of tonsillar infection, in the order of importance.

1. The appearance of the diseased tonsils; adhesion of the pillars to the tonsils. Dark red, congested appearance of the anterior face of the anterior pillars.

2. A thin milk-like secretion obtained from the tonsils by expression, containing pathogenic organisms, usually the streptococcus hemolyticus or viridans. Pathogenic organisms, usually the streptococcus hemolyticus or viridans especially when secured from the bottom of the spaces between the tonsils and the anterior and posterior pillars, or from the bottom of a crypt.

3. Clinical evidences of infection.

4. Lymphocytosis, polymorphonuclear decrease, leukopenia, usually in association with anemia.

5. History of recurring tonsillitis or tonsillotomy.

6. Enlarged cervical glands.

317 South 18th Street.

*Lymphocytosis, as a diagnostic sign of chronic periapical dental infection in adults. Journal A. M. A., October 22, 1921. Page 1308.

THE INFLUENCE OF MECHANICAL PRESSURE ON WOUND HEALING*

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In much of the reparative surgery the operator will be tremendously handicapped until he realizes that the satisfactory result is more dependent upon intelligent application of the older surgical principles than upon an aseptic technic as ordinarily interpreted, though the latter is never

*A Resumé of the Oration of Surgery delivered at the annual meeting of the Illinois State Medical Society, May 8, 1924, at Springfield, Ill.

to be disregarded. A consideration of the bearing of one of these older principles to this type of surgery will be a much more fitting and profitable subject to present for your consideration than any technical tricks or possibly out of the ordinary cases that might be at my disposal.

The maintenance of a definite external surface pressure is essential not only to the life of the body but also to the proper functioning of the various organs. The movement of the contents of the alimentary canal, the circulation of the blood and the respiration of air are all dependent upon differentials of pressures. Special provision has been made for maintaining the tension of the muscle sheaths and of the abdominal and thoracic parietes; greater or less disability will follow a disturbance of these mechanisms. In dealing with the pathological results of such disturbances, artificial pressure has long been recognized as one of our most important resources; therefore, we use the truss or the abdominal binder to compensate for a hernia or bandage the leg for varicose veins or for lymph stasis. In the healing of wounds, it is one of the great helps which we may add to the natural reparative forces. Where a disturbance of the pressure balance within the tissues is complicated by an infection, there is no chemical or emollient that has the antiseptic value of properly applied mechanical pressure as illustrated by the efficiency of complete circular strapping of the leg for a varicose ulcer or the application of a firm pressure dressing to any granulating surface.

The application of most any dressing produces pressure, but he who employs this pressure in a selective, purposeful manner will get bigger returns than he who applies it incidentally or even as a matter of routine.

There are chiefly four basic things to be gained by the use of properly applied mechanical pressure to wounds:

The elimination of dead spaces.

The control of oozing.

The limitation of venous and lymph stasis.

Limitation of the amount of plastic material that pours into the wound.

In wounds about the face and mouth the above factors combine to form a much more efficient preventive of sepsis than the most painstaking attempts at an aseptic technic.

The amount written in the previous two decades on the technic of the "Thiersch" graft would fill volumes, no small part of this being related to the after cure and dressings. Our observation leads us to believe that properly applied and maintained pressure is the one essential and that it will usually neutralize the possible effects of accidental wound contamination; that size, thickness and the location of the graft are matters of little relative importance. Without stopping to trace the development of this plan of grafting, it is sufficient to mention that if one or several pieces of "Thiersch" graft containing one or ten square inches of epidermis are wrapped, raw surface outermost, on a wax form and buried in the floor of the mouth, as high a percentage of perfect "takes" may be expected as with any graft applied to a surface with the most elaborate technic. The wax form must be of the proper size and shape and must be sutured in under proper tension, but, on the other hand, salivary contamination apparently may be disregarded. In applying "Thiersch" grafts to a recently made clean raw surface, to a granulating surface, or one from which the granulations have just been cut the use of well controlled pressure is our main reliance to insure the best chances of a good result. An explanation of the freedom of sepsis under this treatment may be that the close contact maintained between the raw surfaces of the bed and of the graft permits of the efficient tissue action upon the bacteria and their products. This is in no way meant to belittle the value of the standard aseptic technic but rather to emphasize the fact that, in the healing of wounds, the latter is not the only adjuvant at our disposal.

An attempted aseptic technic combined with pressure dressing has not always saved our grafts but in the comparatively few instances where failure of the graft has been due to sepsis there has been a strong suggestion of an auto-inoculation. The patient in almost every instance has been the subject of active septic lesions in some more or less remote parts of the body at or shortly before the application of the graft. On the other hand, the number of cases in which success has followed the implantation of free grafts in nonsterile fields is now fairly large and I believe that in this success properly applied mechanical pressure was an essential factor.

Our technic for using the full thickness skin graft was at first based on two premises; first, that if the transplanted skin were surtured at its normal tension or at slightly plus tension the cut ends of the cutaneous vessels would remain open and would more quickly take up a blood supply; the second, that as each particular part takes its blood supply from the immediately subjacent tissue, the only logical limit to the size of a graft would be the amount of operating and hemorrhage the patient could stand. Subsequent experience justified both of these conclusions, but very soon after these two hypotheses were put into practice it became evident that there were additional factors of almost equal importance that still remained to be catalogued. The first of these stumbling blocks was a fact long ago recognized in dealing with large, thin flaps; that it is one thing to have blood supply and quite another to have an adequate venous return. In the first several of our cases the full thickness grafts were applied to the bridge of the nose or to the forehead. In the former the tension of the sutures drawing the graft over a curved firm surface, and in the pressure of the bandage that held the dressing, both helped to limit the amount of blood that could stagnate in the skin while the new venous return was being established. It was not until the attempt was made to place a large graft on the cheek were we forced to conclude that in the previous cases good luck had outrun calculation. In this particular case the retaining dressing were removed at the end of two days for fear mouth secretions might seep under them and the newly adherent graft was left exposed. Within a few hours the pale pink skin became deeply blue and repeated scarifications, carried on night and day, and citrate of soda packs failed to save us from the painful necessity of explaining to the patient the loss of 7/10 of a 3x4 inch graft. That part of the graft survived which lay over a wax form in the hollow of the cheek which furnished counter-pressure to the bandage that held the pack in place.

Based on this experience a marine sponge pressure dressing was evolved which, if carefully applied and made of sponges of proper quality, will maintain an even pressure over an irregular surface or one without underlying bony counter-support. Further use of this pressure dressing demonstrated an unforeseen virtue and an inherent danger. It permits of the application of the graft over a freshly made raw surface, such as results from the removal of a scar, without tying any but large vessels, but if the pressure is too great, especially over a bony prominence such as the outer part of the supra-orbital ridge or dorsal surface of the middle metacarpal bone, it can kill the compressed area by ischemia. Maintenance of the proper pressure for four or five days will prevent the graft dying from engorgment, but its early discontinuance favors the formation of blebs which latter may lead to another catastrophe. The blebs are apt to become infected; continuance of the sponge pressure for several days longer helps to control the formation of blebs.

The common plan of transplanting rib cartilage into the bridge of the nose is through an incision made within the nostril. A high percentage of "takes" follow this procedure compared with the frequency with which apparent breaks in "technic" occurs. This suggests that here too pressure from the elasticity of the skin or of superimposed padding may have some influence on the average outcome.

In the preparation and transplantation of pedicle flaps one of the most disastrous incidents is the failure of union of the flap to its original or its new bed and one of the most efficient preventives, even in the presence of a moderate amount of contamination, is evenly applied pressure. The safest and most efficient plan of applying this is the incorporation in the dressing of one or several large, soft marine sponges that have been wet, rung out in a twisted towel, and immediately bandaged in place. It is particularly useful where the graft is bedded on a surface of irregular topography and consistency. To a less certain extent this sponge pressure can help to control venous stasis which threatens the vitality of the flap.

These observations are backed up not only by our experience but also by that of the general surgical service where the marine sponge pressure dressing has been adapted for holding the skin flap up in the axilla after a radical breast amputation. We have found it equally efficacious in maintaining contact after extensive neck dissections.

In applying this sponge pressure one must

use his surgical sense to gauge the desired tension but he can use it with the assurance that he has more leeway in making this pressure than with any other padding substance with which we are familiar.

MENTAL HYGIENE: THE OPPORTUNITY FOR THE FAMILY PHYSICIAN*

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The fundamental principle of mental hygiene is to detect any early deviations from a normal condition. This is the opportunity of the family physician. If he is well trained he knows at least when he needs counsel and where to go. If he has had experience, he is likely to be keenly alive to the hopefulness of the present forward movement in the mental health of children.

Mental hygiene is not spectacular. There must be an appreciation of the problems involved in order to enlist attention. A broken bone or a ruptured appendix is an obvious problem. The problem of a functional nervous disorder or a bad mental habit is just as real. We are weary of hearing "It is only my nerves." What can be more fundamental than illness of the intergrating apparatus which controls life?

Mental hygiene is essentially preventive medicine. And preventive medicine is largely educational. Half the business of the family physician is pedagogic. It is not too much to ask that the family physician make it quite plain to his patients that mental health is an equilibrium of feeling, thinking, doing; that mental health involves a good environment during the formative period of childhood added to a good inheritance, and coexistent with training in conscious choice of that which makes for good.

Recent conferences on mental hygiene, the rather frequent recurrence of the theme on medical programs, and the popular lay articles indicate the growing consciousness of the value of mental health. Most important are the research institutes which are making a definite inquiry into the causes and remedial measures.

The sources of our information in searching the way by which we shall secure mental health are many, including the hospitals for the insane, feebleminded and epileptic; correctional institutions, schools where is found the problem child; social agencies, as community centers, industrial workshops, recreation groups; and finally the "crank," the "fool" and the "queer folk" at large.

The general practitioner gets the first chance at most of these, because he is called to give relief. If he knows as much psychology and psychiatry as he does anatomy and chemistry, he is in a position to follow up and relieve the patient mentally ill, or refer such to the specialist who may be better able to direct treatment.

The statistics of the increase of the insane, feebleminded and epileptic, the appalling increase of crime, the inadequacy of housing quarters and occupation therapy in the best of them, and the horrid degradation in the worst of them is well enough known to you all, if you have as much as walked through institutions of each type.

Illinois pays a quarter of her taxes for insane, charitable and correctional institutions. New York pays a third. There are probably as many patients at large needing medical care as are in institutions. The Chicago Psychopathic reviews twice as many patients as the Boston Psychopathic with a staff less than half. In consideration of this large group of incompetents, there is no other acceptable solution for the future than to deny to them reproductive ability.

Once committed to a hospital, the medical responsibility is transferred from the family physician to the staff. But the physician comes intimately into contact with the next group, that of the court. During the past three months a group of boys between the ages of 12 and 18 have been brought into the Juvenile court three times for stealing automobiles. Probably any day's record there will duplicate it. The majority of delinquent cases come from abnormal home relationship.

The next group is too young for the Juvenile court. A boy of 11 in one of our grade schools led a gang of seven, entered the building and stole $85 worth of school property. There is a corps of good teachers, a clean school yard, a hot five cent luncheon, but the dirty alleys and streets give no sign of a municipality practicing good civics. And many of the homes carry no incentive to honesty.

Chief Justice Olson in his reports from the Municipal court and in his public addresses re-

*Address before Chicago Medical Society, April 30, 1924.

veals the steps by which he has come to realize that defective intelligence or defective emotion, or both are responsible for 85 per cent of crime. Here is an open mind studying statistics. What does it mean that 2 per cent of the population are charged with crime, that 2 per cent of the population are defective, that the criminal age is 15 to 24, that repeaters are not often reformed, that they reappear in the morals court and later in the court of domestic relations?

Sometimes an official is careless of responsibility. There is a rule in the Boys court that the card of a repeater be marked "Send to the laboratory." In one instance at least, an irresponsible clerk failed to mark the card, minor judges passed it by. There were seven chances to send to the laboratory, seven failures to get further information and the result was a dead officer, a widow and dependent children.

The study of crime leads inevitably to the consideration of that phrase which sends a shudder through the mind of any one who has watched the tragedy of dementia praecox. The newer term, "schizophrenia," carries within itself a more precise definition and because the milder form of split personality sometimes does recover and the patient does not carry the stigma of the harsher name is to be preferred.

There is no conceivable opposition to the intensive study of the problem child. And this is by all odds the most productive ground in the field of mental hygiene. But an immediate demand is upon our civic activities to consider the extravagance of non-interference with the progeny of those with criminal heredity and with the immigration of such as will increase the defective and delinquent population. It ought to be possible to constitute a commission responsible and with power to act upon such a program. Such a commission might include a psychiatrist, a lawyer from the juvenile court, a churchman of open mind, an economist socially minded and a psychologist.

Our person and our home are the only possessions really much worth while. Mr. Orr's cartoon recently published in *The Tribune* points the way in supervision of immigration. If we change the little Japanese lady and her chickens to the defective and delinquent, it applies admirably to our obligation to keep out of our garden the factors destructive to good racial stock. Physical and psychiatric examination of immigrants at the port of debarkation is the first step.

Prevention of crime historically is based on punishment. Scentifically, it is based on romoval of handicap, segregation and occupation, with vasectomy or tubectomy for repeaters. Fundamentally, prevention of crime demands study of adolescence and of little children.

Judge Summerville of the Alabama Supreme court has been quoted often on the mental responsibility for crime:

Was the defendant mentally ill?

Did he know right from wrong?

Has he through mental illness lost the power to choose?

The law should keep pace with science. So should the church. And public education should not lag. All this and more should be a part of medical training.

Surgical relief which does not impair physical characteristics will gradually be accepted. Segregation and supervised occupation will come slowly because it involves immediate large outlay in an unaccustomed way. The removal of handicap makes a popular appeal and there is universal assent to the study of the problem child.

From Pennsylvania has come recently a significant report.[1] The Danville State Hospital is a rural hospital. The staff secured the cooperation of the medical profession of the region and also that of various civic and educational groups. The conclusion from the first table of 391 children under 16 is that somewhat less than half are possible of readjustment. The rest are hopeless so far as the standpoint of future parenthood is concerned. But from the standpoint of improvement under wise supervision and treatment, the percentage is 75. This is an example of possible community cooperation.

Massachusetts by virtue of its age in philanthropic study has many good things. Two of the most recent are the Judge Baker Foundation and the Habit Clinic for Children. Dr. Thom, the director of the latter, has supervised a series of leaflets well worth distribution by the family physician.

New York follows with special post graduate facilities for the student of mental health. The Commonwealth Fund and the Physicians' Fellowships demonstrate the value of national cooperation.

[1]Jackson and Pike. J. A. M. A., April 4, 1924.

One of the encouragements in our own state is the recent legislation for appropriation of $60,000 for the survey of specially handicapped children. This is under the cooperation of the State Department of Public Welfare and the Chicago Board of Education. The groups comprise three years retardation in school, the delinquent, and any handicap which interferes with school progress.

The recent survey of 5,500 school children in the township of LaSalle, Peru and Oglesby is familiar to all who heard the recent program in the Neurological Society. A fund of $5,000, a cooperative school principal, a psychiatric social worker and a good program make this an admirable model for other communities to follow.

Another instance of community cooperation is the commission of 22 in Vancouver who investigated a faith healing conference. The commission comprised 8 physicians selected for their experience in the pathology probably to be encountered, 3 University professors representing biology, psychology and law, and 11 from churches and Salvation Army. Of the 356 investigated, 212 reported "no change," 5 "cured," 5 had become insane and 39 had died. This constructive community cooperation is gratifying.

But there may be cooperation which amounts to duplication, as outlined by Hyman Kaplan, in "Federating from the Bottom up."[2] A wholly dependent family of seven visited by representatives of eight relief organizations demonstrates rather the kindness of a community than its wisdom.

We have tried to avoid such duplication in a small social enterprise on the south side in the effort to provide wholesome recreation and safe play out of school hours for children under twelve.

Along 55th street east of Cottage Grove is a street car line and the usual crowded flats. The alleys and sidewalks are the playground. An effort to secure a permanent house was thwarted by protesting neighbors. Sunny rooms on a second floor serve as a play room where two trained, salaried workers direct activities of normal children. Girls do housework as well as the boys, and boys ask to come into the sewing classes. A little girl handicapped by deafness excels in the water color class. In the summer vacation a salaried supervisor is on the play ground of the Ray School afternoons until dusk, and some effort is made for street play at the corner of most dense population.

One of the finest things being done in Chicago to relieve the socially handicapped is the Industrial Workshop on West 13th Street which maintains a weaving room, sewing rooms for part time workers and a shoe repair shop. Here the diagnostic group of the Michael Reese Dispensary cooperates with the Jewish Charities and returns many an individual to industry. This enterprise ought to be duplicated in many sections as a practical solution to the problem of financial relief to the needy.

The problem child does not respond to ordinary methods, is a menace to other children, and is usually handicapped by environment or heredity and frequently by both. From Little Rock, Arkansas, comes the story of a recent mental hygiene conference under the chairmanship of Dr. Ida Joe Brooks, in which "a play with an all-star cast" is staged. An hypothetical child is introduced by the Supervisor of primary work, and referred to the attendance officer who finds the child a truant and refers him to the physician for physicial examination. Thence he goes to the psychologist for mental rating. Being defective and delinquent, the psychiatrist makes a differential diagnosis and gives the prognosis, calling upon the Secretary of Charities to relate the possible institutions in the state where such a problem can be further cared for. Finally the Superintendent of the State Hospital contributes his part in the study of the problem child. This community cooperation is of a high order and makes for progress in mental health.

What to do? Carry on with patience and persistence until there is an adequate medical corps to staff all the child clinics needed and until the laity keep pace with science.

[2]Survey, March 15, 1924.

MONOCULAR MYOPIA*

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An individual with monocular myopia is generally unconscious of this condition till some adventitious circumstance—such as an injury to the affected eye—induces an ocular examination. The injured party then naturally assumes that the trauma is responsible for the defect in vision,

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whereas in reality were it not for the amblyopia, the ocular or periocular injury would probably not have occured. That such a situation may have a serious medico-legal aspect is obvious. In view of our present day compensation laws, exact knowledge about such a condition should be readily available. Unfortunately, in the books and periodicals written in English the references to monolateral myopia are but scant and causal. I have consequently felt that a discussion of this subject would be of distinct value.

The two eyes generally present about the same type of refraction. Inequality, when found, is mostly in myopics. This variability is possibly

FIG. 1. WHICH HAS MOLECULAR MYOPIA?

These men are identical twins, age 26. The refraction of the left one is: R.—19.00S; L.+1.25S. The other's correction is: R.—8.00S. ( )—.75C. x 15; L.—12.00S. The former keeps his eyes wide open, as he only uses his hyperopic eye. The other, however, with both eyes highly myopic, has the palpebral fissures characteristically narrowed. They both are illiterate, manifest constitutional psychopathic inferiority, and have a mental age of 10. Their general health is poor.

accounted for by the essentially morbid process present in myopia, whereas hyperopia represents but a state of defective evolution. Decided hyperopia that is confined to one eye occurs,—but very seldom.

The incidence of monocular myopia is surprising. Of 1,240 cases of myopia studied by Manguis[1], the monolateral ones numbered 180, or 14.5 per cent. This ratio is probably accurate, as practically the same figure is obtained from combining a large number of cases reported by others. (Schiotz[2], Vignes[3], Nimier[4], Dor, De-Reuss, Nordenson, Seggel).

In the newborn myopia is only most exceptionally present, either as a monolateral or bilateral affection. Among 3,200 infants examined by recent investigators, not a case of myopia was noted (Parsons[5]). Monolateral, like bilateral myopia, develops during the formative years. Vignes, in his study of 321 schoolboys between the ages of 7 and 13, found 42 cases of myopia, 14 of which were monolateral. These monolateral cases were all above the age of 10. Myopia that has developed in one eye remains indefinitely monolateral. Sixty per cent of Manguis' 180 cases were over 20 years of age, which would definitely indicate that the companion eye remains permanently uninvolved.

The maximum degree of monocular myopia noted has been, for man, —20.D.; and for woman, —24.D. The number of female cases definitely exceed the male in the higher degrees of antimetropia. Two-thirds of Manguis' 45 cases above the —6.D. range were in women. Drualt-Toufesco[6], in a series of 351 cases above the —3.D. range, found 223 women, 128 men.

The most frequent range in monocular myopia is —3.D. to —6.D.; and nearly three-fourths of the cases are under—6.D. The right eye is most often affected (57 per cent). This is in accordance with Duane's observation that in anisometropia the right eye usually has the higher refraction. There is no harmony between anisometropia and strabismus, though strabismus divergens is frequent above the —6.D range. Facial asymmetry is only occasionally marked. Where notable, the myopic side is larger and better developed. (Risley[7], Vernon[8]). In my most extreme case, with the refraction: R.E.—19.00D; L.E.+1.25D facial asymmetry was wanting (note photograph), though marked divergent strabismus was present. On the other hand, a patient whose face was most markedly asymmetrical from a congenital defect of the left infraorbital region (malar and maxilla involved) disclosed under atropin refraction but simple hyperopia: R. +1.50S., 20/15; L.+1.25S.,20/15. These discordant findings tend to corroborate the view that no definite relationship exists between refraction and interpupillary distance. Schneller found the mean interpupillary distance in hyper-

metropes, 59.95mm.; in myopes, 61.45mm.—a difference of but 1.5mm.

Pfingst[9] has reported the following unique case: A woman at the age of 15, after cycloplegic refraction, received the following correction: R.+.25S()+.75C X105; L+.50S()+.50C °75. These lenses gave 20/15 vision to each eye, and relieved completely the asthenopic symptoms. At 18 the glasses were still satisfactory, and gave a vision of R.20/15; L.20/15. At 26, the patient reported impairment of vision in the right eye that had developed to such a degree as to render that eye useless. The eye squinted markedly outward, vision was 20/200; and the refraction —6.00D. A large myopic crescent was present. A year later the myopia of this eye had increased to —8.50D., and the chorioid showed atrophic areas. This remarkable case shows that the development of monolateral myopia after 18, though most unusual, is undoubtedly possible.

Trauma may produce monocular myopia, but such cases are lenticular, *not axial,* in pathology, and are generally dependent on a ciliary spasm or an anterior dislocation of the lens. An example of the former type is illustrated in a report of Schiess[10]. The patient's eye had been struck eight weeks before by a large case. Examination under atropin cycloplegia disclosed a refraction of —4.75D. After the use of atropin for five months, the myopia diminished to —.75D. Curiously enough, subluxation of a clear lens has been noted in a previously emmetropic eye (Rompoldi, cited by Wurdemann[11]). The anterior surface of the lens touched the cornea, but with a correction of —5D. the patient secured full visual acuity. Laws[12], in a report of temporary myopia following trauma, advanced the theory that ciliary paresis occurs causing lowered tension, which in turn permits the pressure of the extra-ocular muscles to lengthen the globe. His patient had been struck in the right eye by a cork from an exploding bottle seven days previously. Under atropin, the refraction was —6D. In a week the eye returned to emmetropia. Laws, in his interpretation, evidently fails to realize that a ciliary spasm can resist for some time the effects of atropin. The temporary hypotony that sometimes follows injury passes away without leaving any ill effects behind (Fuchs).

Axial myopia in its behavior and pathology is no different in the monolateral than in the bilateral form. This alone indicates the very minor importance of extrinsic factors, for myopia may develop progressively to its most malignant form in an eye that is altogether unused. Myopia often accompanies opacities of the cornea or lens, or follows in the wake of chorioiditis, but the explanation is invalid that attributes this secondary myopia to the close approximation of near objects that follows the effort to secure a larger retinal image. Two of my cases of monocular myopia had bilateral opacities. In one, age 30, with symmetrical face (interpupillary distance, 67mm.), light maculae were symmetrically situated about the corneal centers. Vision was R.20/100, L.20/15; the refraction, R.—8.00D., 20/70; L.+.75D.20/15. The true cause of secondary myopia is not the deleterious action of near vision but rather the softening of the sclerotic coat directly or indirectly occasioned by the antecedent disease.

Struck by the frequency of secondary myopia, Manguis assumed that the explanation of monocular myopia rests on a similar basis. He supposes that in the early life of predisposed individuals, corneal affections or ocular or periocular traumatisms have occurred setting up an irritation productive of myopia. Since corneal opacities may clear completely, the corneal inflammations not leaving any trace,—evidence of such antecedent affection in later life may be entirely wanting. It seems unlikely, however, that an irritation of the cornea intense enough to profoundly affect the sclerotic coat would not leave some trac, though it is possible that our usual methods of examination may not be adequate for its detection. However, Dr. Von der Heydt of Chicago was kind enough to examine some of my cases with the slit lamp, and reported their cornea and lens absolutely clear, in confirmation of my previous findings.

Recent researches in developmental mechanics as well as studies in organ inferiority are very pertinent to the whole subject of myopia. In the early embryo the developing head-end always shows the highest rate of oxidation and activity, the activity gradually diminishing toward the posterior end. The more active a region is the more it reacts to adverse chemical or physical phenomena (Child[13]), and the eye particularly is susceptible to any kind of harmful influence. Utilizing agents that depress the embryonic or-

ganism at critical stages in development, Stockard[14] has experimentally produced almost every variety of ocular defect—coloboma of iris and chorioid, opacity and displacement of lens, persistent hyaloid artery, microphthalmos, etc. These anomalous eye conditions, when produced by deleterious agents acting on the parents, are later spontaneously transmitted generation after generation—in the general manner of a Mendelian recessive. The transmission is not infrequently of an irregular unilateral type, sometimes only the right, at others only the left eye showing the defect (Guyer[15]).†

Fetal defects according to their degree, produce a functional or morphologic inferiority of the organ involved (Adler[16]). This inferior organ in later life is particularly liable to disease. For example, I have noted that when hordeolum, pterygium or iritis affect one eye, it is usually that which previously had the more abnormal refraction. Adler thus illustrates how deceptive is the role of chance: A boy of 8 was injured in August, 1905, by a pen penetrating the conjunctiva of the left eye. The wound healed uneventfully. In October, 1905, a foreign body entered the left cornea, and was removed with excellent recovery. In January, 1906, the left eye received another pen prick. All this seems bad luck, but the following family history was ascertained: The maternal grandfather suffered from diabetic iritis; the mother and the patient's younger brother had both hypermetropia, diminished visual acuity and convergent strabismus. A brother of the mother had convergent strabismus, and a history of recurrent phlyctenular conjunctivitis. Our patient had normal visual acuity with slight hypermetropia, but showed a functional deficiency—a bilateral lack of the conjunctival reflex.

Congenital defects are particularly common in myopes; they are also relatively frequent in high hyperopes; but the defects found in the myopes have to do with irregularity in the late development of the eye, whereas in high hyperopes the defect is in the early development. Two of my monocular myopes showed remains of the hyaloid artery in the affected eye—in one as a posterior polar cataract. In 1,714 myopes studied by Drualt-Toufesco, 48 per cent showed local ocular anomalies. The scleral and chorioidal crescents so common in myopes are on a congenital basis, and are not infrequently seen in hyperopes and emmetropes. Their frequency in myopia merely indicates that the eye with this congenital anomaly especially tends to acquire posterior staphyloma.

In his analysis of human types, Stockard[17] points out that a fundamental relation exists between the state of refraction and development in general. In development, linear structure is derived from initial rapid growth along the body axis. Lateral growth only expresses itself after that in length has become slower. According to the dominance of these factors, mankind is divisible into linear and lateral types. The linear type arrives at puberty early, tends to be farsighted, long-headed and under weight for height. The voice is bass or baritone. Temperamentally the individual is self-conscious and energetic, rarely laughs aloud, and when suddenly shocked never screams. The lateral type is slower in maturity, tends to be myopic, broad-skulled and stocky. The voice is high or tenor. The nasal bridge is wide and often low; the mouth wide and the teeth smoothly set. In many other ways are these types antithetical. The different types occur in all races, all classes, and all countries; but it is probable that the type differentiation is principally due to environmental influence. The linear type predominates in maritime climates, such as England, where iodine is abundant and the thyroid active. The lateral type, exemplified in the Germans, is most often seen in central continentals, located far from the iodine supply of the sea.

Primary myopia must then be considered a congenital evil, which would be influenced most by the proper selection of individuals for marriage. It is rare to find myopic children in families where both parents have normal eyes.

CONCLUSIONS.

1. Monocular myopia is almost identical in behavior and pathology with the bilateral affection.

2. No proved case of axial myopia exists consequent to trauma to or about the eye.

3. The frequent association of corneal opaci-

†Prof. C. R. Stockard in a personal communication writes: "From a rather wide study of vertebrate embryos-birds and mammals, as well as fish, I am inclined to believe that the two eyes are rarely symmetrically developed. One eye and one side of the brain almost invariably has a slight developmental advantage over the other side as indicated by a little difference in time of differentiation and a little difference in size. I am inclined very much to suspect without very much actual evidence that the right side might show an adventage over the left in certain diseases, and vice versa in others."

ties with secondary myopia suggests as a prophylactic measure the early, active and prolonged treatment of the antecedent keratitic affections, especially when they occur in children.

4. Primary myopia is based on congenital organ inferiority of the eye involved.

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DISCUSSION

Dr. Harry S. Gradle, Chicago: We ran across a great many cases of high myopic error in one eye prior to Dr. Lebensohn's findings and it has been my experience that the majority of such cases are aware of the defect in that eye before they come for refraction. That, of course, is rather incidental.

The war and the subsequently developing examination of eyes in the service has brought out a great many of these cases that formerly were unknown. I wish to mention incidentally two cases that bear upon this subject. One was a man with emmetropia in one eye and the other somewhere between 12 and 14 diopters of myopia. Then occurred a severe retinal hemorrhage in his good eye, leaving him with a highly myopic eye which was barely sufficient to allow him to get around alone. Even with the best possible correction his vision was not sufficient that he could leave the limits of known surroundings. However, by giving him a proper correction in that eye he gradually developed sufficient vision in that eye so eventually he had vision enough to enable him to go around in his own town without discomfort.

The second type of case was a little girl four or five years old whom we examined under atropin and found essential emmetropia in one eye, whereas in the other there was myopia of from 4 to 5 diopters with a resultant poor vision. With the best possible correction of the myopic eye, her vision was about .2 of the normal. We endeavored to educate vision in that eye by giving her a correction of the myopia with a ground glass over the emmetropic eye, this correction to be worn during meal time and for about an hour and a half each day. In the course of 8 months following, the vision in that eye developed from .2 to .8. Of course there is no fusion and of course the eye is not utilized. But there is sufficient vision in that eye so that in case anything should happen to the other eye, it will always be useful.

Dr. Michael Goldenburg, Chicago: Just one or two points relative to the subject. That is, the possibility of these eyes being congenitally predisposed to myopia. Furthermore, relative to the so-called softening of the sclera that has never been confirmed. It is mere theory. We do know that the sclera of the very young is soft; not exactly soft but will stretch. And I wonder if in these cases there is not a defect in the production and exit, particularly the exit of the fluids thereby producing what we call in later life hypertension. By its interference with the free exit of the fluids probably this sclera is stretched and in that way produces myopia.

Dr. M. H. Lebensohn, Chicago: The essayist has given us a pretty good summary of the subject of monocular myopia. It is necessarily largely statistical. I will confine my discussion briefly to high degrees of monocular myopia, because it is more interesting, just as the high degrees of binocular myopia are of greater interest than the lower degrees. So it is in monocular myopia also. As the essayist stated, the majority of the cases are about from —25 or —50 up to —6 I will take the myopias from the high degrees, from 7½. Fuchs considers the high degrees of myopia from 10 diopters up. I suppose he took 10 diopters because the pathological changes in the eye, that is the choroidal and retinal changes, are more manifest in the high degrees than under 10. I have seen a good many cases from 7½ to 8 diopters where there were quite characteristic changes in the retina and choroid. Hence I will take that as a basis.

I have recently reviewed 9,639 refractions in private practice, taking from 7½ diopters up. I found 35 cases of high degree of monocular myopia. That is, one eye was hypermetropic or emmetropic and the other eye was anywhere from 7½ up to 14 diopters.

Now, contrary to the usually accepted statements that in cases of monocular myopia the right eye is more often involved than the left, I find that in my cases they were nearly even; 18 were in the left and 17 the right, except that in the right eye the monocular myopia was higher. I have had as high as —14, I think in one eye and —.25 in the other, while where the monocular myopia was confined to the left eye it was less. The highest I had in the left eye was two cases of 9 diopters and the rest from 7½ to 8. I also had this in a number of cases not strictly monocular myopia, where the difference in the refraction was high between the two eyes, but cannot be classed as monocular.

Now of the various theories advanced as the cause for the elongation of the eye, I think the theory advanced by Von der Hoeve that it is due to an inflammatory condition that makes the choroid and sclera softer or the one advanced by Schnabel that it is a

congenital defect, is more reasonable, especially in cases of monocular myopia, than the other theory that was mentioned by the essayist as muscular pressure or the shortness of the ciliary muscle.

The reason I was so especially interested in monocular myopia, especially of the high degrees, is because it is not only of scientific value, but has great practical value.

The question is what can you do for a case of monocular myopia? Take a patient with either normal or nearly normal vision in one eye and a high degree of myopia in the other. Would that patient be benefited by strong concave lenses? I have experienced along that line and I have found this: That in cases of young patients, that is under 15 years of age, they are frequently benefited by the correction. I do not know how the binocular vision afterwards is or whether there is any. The doctor will perhaps discuss the fusion center and try to find out whether one can wear a —10 or —15 in one eye and a weak — lens in the other eye, and be able to fuse or not. I find young patients can wear them with a good deal of benefit and with some comfort. With patients over 20 or 25 I find they do not derive any benefit at all. The myopia progresses and stronger concave lens will be necessary and, furthermore, they are frequently not able to wear the correction.

THE FOOTHOLD BY WHICH THE BOGUS PRACTITIONER DISLODGES THE SKILLED MAN.

THE "WHY" OF LAY EDUCATION.

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The fact that uneducated and unscrupulous individuals are seizing every opportunity to participate in the practice of medicine constitutes a menace to public welfare and the advancement of science for which the medical profession itself is, in a measure, to blame. These are days when the masses follow the banner of publicity and the medical profession has fallen out of step.

Ethical proscriptions of the medical confraternity inhibit the exploitation either of their own members or the mother science that they serve. But on all sides the bogus skill of the incompetents is exalted to the skies. Besieged by the cry of the charlatan, the sick man hears and believes to his own undoing. He does not know the difference between what is false and what is true. He hears vaguely of wonderful progress and miraculous "research discoveries" made by medical science. But taking advantage of the dignified reticence of medical science, the charlatan seizes upon the name, and perhaps the method, of specific progress and uses it to delude the ill and unwary. The sick man does not know where to find efficiency even if he knows of its existence. In other words, the quack sits in plain sight with his shingle out, while medical science hides its light under a bushel.

To place before the citizenry of the country a knowledge of what is being done by reputable medical men, and to show clearly how the everyday man may avail himself of scientific advances both for himself personally and for the public health, is an added task laid upon the shoulders of the doctors. It is a direct result of the complex twentieth century civilization.

The quacks and charlatans flourish from their appeals to personal egotism, through the specious suggestion of the possibilities of self medification, and through the purchasing power of spectacular and exaggerated advertising. Such ways and means are, of course, beyond the pale when ethical considerations are taken into account. But the way that must be followed, the only path possible for the conservation of the public health and welfare, and the future of medicine, lies in a generous, simple, but widespread revelation of the truth about medicine, what it has done, is doing, and is going to be able to do, for the benefit of suffering humanity.

A point distinctly worth consideration is the reinforcement of the profession. Standards of medical education have been raised from time to time until at present the requirements are so high that a man cannot enter the practice of medicine until he has reached approximately twenty-seven years of age. This means, too, that he will have expended upwards of $25,000 of money already earned to secure his medical education, to say nothing of the loss of potential income that he might have been making from the time he was sixteen years of age while working as a bricklayer at wages far in excess of what the average doctor makes the first five years of his practice.

Put this situation against the allurements held out to students of the cults and systems who are being advertised for in all the cheaper class of magazines and periodicals to "take an eight weeks' course and learn to be a something-or-anotheric and get a doctor's certificate." Brakemen, plumbers, and ambitious barbers are

studying at home nights and noontimes and clamoring for recognition as scientific medical men. The public is not yet awake to what it needs for its own protection.

Another important point is found in the fact that the trend of modern education has left the younger generation of doctors impatient of the little things. Yet the routines of life are made up of trivialities.

Upwards of 75 per cent, moreover, of human ailments are to be classed accurately as trivialities. These younger doctors, for the most part, have their eyes fixed upon the great moments of medicine, with almost complete disregard of the everlasting minorities. Intent upon the critical laparotomy, or other serious surgical operation, idealistic young physicians are prone to neglect the everyday need of the ailing public. AND HERE IS THE LOOPHOLE THROUGH WHICH THE BOGUS PRACTITIONER CREEPS TO FIND A FOOTHOLD BY WHICH HE MAY DISLODGE THE SKILLED MAN.

Out of the inattention of scientific men for ordinary wants of an indisposed people spring and flourish the mass of cults and mock medicine that insidiously deprive the sick of expert medical attention. The pseudists lend a sympathetic ear as they receive cash in advance for their treatment of petty maladies.

INTRACRANIAL COMPLICATIONS OF SUPPURATIVE OTITIS MEDIA*

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This paper is based upon a study of the intracranial complications of suppurative otitis media that were observed at Cook County Hospital during the decade from 1911 to 1920, inclusive. Only the most frequent and important complication will be considered. Of the total number of cases of suppurative otitis media, 10 per cent. had associated some form of intracranial complication. Multiple intracranial complications were usually present in the cases classified either as meningitis, sinus thrombosis, or brain abscess. Multiple intracranial complications add to the sum total of the symptomatology and therefore the clinical picture assumes the composite type making a complete diagnosis very difficult or impossible. This fact is of great importance in the diagnosis, as we may not only have the symptoms of the complication under consideration to deal with, but in addition, those of the primary disease and associated intracranial complications.

1. *Meningitis.** Meningitis was found to be the most frequent complication. It occurred in 5% of the cases of suppurative otitis media. Sixty-three cases of meningitis showed a mortality of 97%; of the 29 cases that were autopsied, 100% showed meningitis, 34% sinus thrombosis, 14% cerebral abscess, 14% cerebellar abscess, and 10% extradural abscess.[1] In the cases in which the spinal fluid was examined, 54% showed microorganisms; the cell count ranged from 120 to 367,000 cells and was over 1,000 in 73%.

There is much confusion in the nomenclature of meningitis due to the multiplicity of adjectives used to describe the same pathological entity, e. g., serous, circumscribed, sympathetic,[2] and protective.[3] These terms refer to a type of cases in which there is meningeal irritation or a localized irritative meningitis due to the presence of some suppuration adjacent to the meninges and for convenience will be referred to as Type 1 meningitis. There is another type which is called suppurative, purulent, diffuse, septic or those designated according to the causative bacteria as streptococcic meningitis, etc.; these will be referred to as Type 2 meningitis.

Clinically, we distinguish three conditions, 1 meningismus, 2 Type 1 and 3 Type 2 meningitis, in which we have menigitic symptoms in varying degrees of severity, viz., mild, moderate and severe. A meningismus is ruled out at once by the presence of a normal spinal fluid; in both types of meningitis we have evidence of the presence of an inflammation of the meninges in the spinal fluid, viz, increased spinal fluid pressure, quantitative increase and qualitative change in the cytologic content of the spinal fluid, and the presence of globulin.

How are we to differentiate the two types of meningitis?

First, bacteriologically. This is the earliest distinguishing feature. A sterile fluid indicates

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*In this group were classified those cases of meningitis in which suppurative otitis media and no other focus of infection was present or where the clinical or pathological evidence pointed to the otitic involvement as being the cause of the meningitis. Care was used to exclude meningitis due to other causes as the meningococcic, tuberculous and syphilitic meningitis, etc.

Type 1 and the presence of bacteria indicates Type 2. But, many cases of Type 2 are associated with negative smears and cultures, because in the early stages, Type 1 may be a precursor of Type 2 meningitis. I am certain that microorganisms would be found in most cases of Type 2, if the spinal fluid was subjected to a daily search of the smear and culture, as nearly all of these cases at autopsy give positive bacteriologic findings.

Second, cytologically. The spinal fluid in Type 2 is characterized by a relatively high cell count. As a rule, a cell count over 10,000 speaks for Type 2 and under 10,000 for Type 1. There are numerous exceptions to this, but every 100% increase over 10,000 makes the diagnosis of Type 2 more certain. In the borderline case, it is impossible to differentiate the two types cytologically.

Third, clinically. In Type 1, the meningitic symptoms rapidly disappear after the early drainage of the suppuration adjacent to the meninges and the patient recovers, whereas, in Type 2, there is no successful treatment and it is fatal. But, there are exceptions to this rule as Singer,[4] states that the presence of organisms is not infrequently associated with low cell counts in circumscribed meningitis and these are the cases in which bacteria are found in the spinal fluid which have been reported as recovered.

The practical application of the clinical division of meningitis into two types is to contrast more sharply the indication for the immediate operative interference in Type 1 of either otogenous or rhinogenous origin. If operative interference is delayed too long, Type 1 may develop into Type 2. When the subarachnoid space is diffusely involved as it is in Type 2 it cannot be successfully irrigated and drained as is the case with the other endothelial lined cavities as the pleural, synovial and peritoneal cavities. In this connection, I wish to repeat and emphasize a former statement,[1] "the presence and especially the persistence of a Type 1 meningitis of otitic origin after a mastoid operation has been performed, in order to exclude sinus thrombosis, perisinus abscess or extradural abscess, denotes the presence of some intracranial suppuration as subdural, cerebral or cerebellar abscess and calls for an immediate operative exploration of the middle and posterior cranial fossae."

Finally, we must not overlook the fact that an individual with an otitic suppuration may have a meningococcic meningitis. Therefore, the spinal fluid should be examined for the meningococcus and if found or if in doubt, an intraspinal injection of antimeningococcic serum should be given.

2. *Sigmoid Sinus Thrombosis* was found second in frequency; 34 cases being observed which was 3% of the cases of suppurative otitis media. We should suspect any case of suppurative otitis media that develops a rigor or chilliness that cannot be explained by the presence of infection elsewhere as, tonsillitis, erysipelas, pneumonia, malaria, pyelitis, etc., of being at least a presumptive case of sinus thrombosis. This becomes especially significant when the chill is followed by a high fever and sweat and there is associated mastoid tenderness or radiologic evidence of mastoid involvement. Leucocytosis is usually marked, but I have seen it absent. Chills and chilliness are not infrequently absent. The fever is usually intermittent, of the church steeple type; it may be remittent. I have seen fever absent. Blood cultures, in my experience, have not been of any aid. It is a mistake of vital importance to the patient to procrastinate, awaiting the report of a blood culture, when sufficient signs and symptoms are present to warrant an operative exploration of the lateral sinus. A very suggestive sign in these cases of thrombosis of the sigmoid sinus and jugular bulb is the presence of enlarged and tender submaxillary lymphatic glands. In the 34 cases of sinus thrombosis observed at Cook County Hospital, leucocytosis was present in 97%; tenderness over the mastoid 51%; chills 47%; metastatic foci (arthritis, cellulitis, abscess) 40%, and sweats 21%.

The diagnosis should be made before the occurrence of metastatic phenomena. The earlier the operation, the better the prognosis; every day of delay lessens the patient's chance of recovery. Of the 34 cases, 26 died, or a mortality of 79%.

3. *Brain Abscess* was found third in frequency; 23 cases being observed which was 2% of the cases of suppurative otitis media. Thirty-five per cent. of the brain abscess cases were of otitic origin; the total number of brain abscess cases due to all causes was 64 cases; of the 18 cases of otitic brain abscess that were operated on but one recovered, a mortality of nearly 95%. Of the cases in which the diagnosis was con-

firmed either by operation or autopsy, 65% were temporosphenoidal, 23% occipital and 12% cerebellar.

The symptomatology of brain abscess consists essentially of those of increased intracranial pressure, as slow pulse, choked disc, vomiting, etc., and the focal findings which correspond to the location of the abscess. In a left temporal lobe abscess in a right handed individual, optical aphasia (Freund)[5] or anomia (Ballance)[6] is frequently present. The patient is unable to name any of the common objects shown him but can explain how and for what purpose the object is used. Ballance[6] states that the lesion involves the naming center in the posterior part of the left inferior temporal convolution. Amnesic aphasia may be associated as was the case in a patient who forgot her birthplace and her sister's name. Word deafness or auditory aphasia is the inability to understand spoken language and is the result of a lesion in the posterior part of the left superior temporal convolution. Word blindness or visual aphasia is the inability to understand written language and is the result of a lesion in the posterior part of the left temporal lobe and inferior parietal convolution. In temporal, parietal or occipital lobe abscess, the optic radiations may be involved causing a hemi- or a quadrantic anopsia. Pollock[7] found homonymous quadrantic anopsia associated with an aphasia, in a case of left temporal abscess. It is absolutely necessary to have the visual fields taken in every case of suspected brain abscess. Left temporal lobe abscess has been frequently diagnosed by the presence of anomia and this sign should always be tested for in suspect brain abscess cases. A large abscess in the right temporal lobe may be present without causing any focal signs.

In cerebellar abscess, the focal signs are those of disturbances of equilibrium, orientation and synergy. Among the most important of these are: ataxia with falling towards the side of the lesion; spontaneous past pointing of the homolateral arm outward with the loss of reactive past pointing in the opposite direction; spontaneous nystagmus, which is characterized by being ataxic, and the slow component of which is directed away from the side of the lesion; adiadokokinesia; incoordination of the homolateral extremities. There is frequently loss of response from the cochlear and vestibular nerve on the affected side. Cerebellar signs are characteristically homolateral and affect the side of the lesion.

In general, while the presumptive diagnosis of brain abscess can be made from the symptoms of intracranial pressure, it is only by the aid of the focal signs that a definite preoperative diagnosis and successful localization can be made. In one of my cases of left temporal lobe abscess, the decision to operate was made on the presence of anomia. Among the most significant of the symptoms of increased intracranial pressure are the following: slow pulse, which according to Macewen[8] may be the sole indication for operation. Delayed cerebration is often associated with temporal lobe abscess; optic neuritis or choked disc is present in 50% of the brain abscess cases; severe and continuous headache is a frequent symptom. The symptoms due to presence of infection as fever, leucocytosis, may be due to the primary disease; fever is frequently absent or subnormal. The associated meningitic symptoms may vary from the mildest to the most severe.

The most important procedure in connection with the diagnosis of a suspected otitic intracranial complication is the examination of the cerebrospinal fluid. In an examination of the Cook County Hospital records, I found 12 cases of brain abscess with a report on the spinal fluid cell count in which the diagnosis was confirmed either by operation or autopsy of which 83% had a cell count of 400 cells or less. Type 1 meningitis is always associated with brain abscess, and may develop two months after the abscess had been drained as occurred in one of my patients, who showed a cell count of 94 before operation and two months later, 21,000 cells with streptococci.

The treatment of brain abscess is operative as soon as the diagnosis is made. An otitic brain abscess is best attacked via the avenue of the primary infection for the following reasons: gravity drainage is favored; Nature, frequently, has already coffer-dammed this approach to the brain abscess and has the subarachnoid space sealed off; the location of an otitic brain abscess is frequently adjacent to diseased bone, and local evidences as the dark red color of pachymeningitis, dural granulations and adhesions, fistulous connection with the diseased bone, bulging and lack of pulsation may be present and because the caus-

ative and associated middle ear suppuration should be cleaned up.

Brain surgery owes its gravity to the existence of the subarachnoid space; if it were not for this, the drainage of a brain abscess would not be such a formidable procedure. When there is a spontaneous walling off or exclusion of the subarachnoid space by Nature forming protective adhesions, this danger is negligible and immediate drainage should be instituted at once. Where spontaneous exclusion of the subarachnoid space is absent, we should imitate Nature by producing the necessary protective adhesions. This, I think, is best accomplished by the method of Ballance,[6] who does a two stage operation; first exposing the dura and 24 to 48 hours later, after adhesions have formed between the dura and the pia-arachnoid, drains the abscess.

I believe in a generous removal of bone sufficient to obtain a good exposure of the dura and a relatively small opening in the dura because of the lessened liability of infecting the subarachnoid space and brain and the avoidance of a subsequent hernia cerebri and fungus cerebri. A hernia cerebri is due not to the size of the osseous opening but to the size of the opening in the dura. A hernia cerebri becomes a fungus cerebri on account of a cerebritis.

The most important part of the after treatment is to provide adequate and continuous drainage. The rubber drainage tube should not be removed permanently until all discharge has ceased, which is usually not before three or four weeks. I think it is a mistake to substitute gauze for tube drainage, as this will favor a premature closure of the dural opening; this occurred in one of my cases which developed a fatal meningitis two months after operation.

4. *Extradural Abscess* is usually stated as the most frequent intracranial complication of otitic origin, but as far as our records show, it ranks after meningitis and sinus thrombosis in point of frequency.

It is rarely diagnosed but is usually discovered in the course of an operation in cases of acute mastoiditis or an acute exacerbation of a chronic mastoiditis. It most often occurs as a perisinus abscess and as such is not infrequently associated with sinus phlebitis or thrombosis or both; it also occurs in the region of the tegmen tympani and antri and here it may be associated with a subdural or temporal lobe abscess. Clinically, there may be no symptoms other than those of an acute mastoiditis. It should be suspected, when there has been continuous headache and severe pain over the affected side, associated with insomnia; with marked surface signs over the mastoid and especially significant is the history of a profuse otorrhea with a sudden stoppage. Examination of the spinal fluid will show the findings of Type 1 meningitis, the cell count being relatively low, between 50 and 200 cells.

The surgical management of extradural abscess is extremely important. 1, the treatment of these cases unassociated with other introcranial complications is simply one of adequate drainage. 2, when associated with periphlebitis without signs or symptoms of sinus thrombosis, provide sufficient exposure of the sinus and drain perisinus abscess. 3, when associated with sinus thrombosis, the internal jugular vein should be ligated above the common facial before opening the sinus; the sinus is incised parallel to its long axis; hemostasis is secured by packing gauze between the bone and the sinus wall proximally and distally; the clot is evacuated and free bleeding established, if possible, from both the torcular and bulbar portions of the lateral sinus is packed with gauze.

What is the safest method of procedure, where the spinal fluid shows signs of meningeal irritation? It is important to recognize that the dura is the "danger line," that as long as we keep our surgical procedure external to the dura we are outside of the "danger zone," but if we carry infection through and beyond the dura, when none is present, we then infect the subdural, or subarachnoid spaces or the brain, and thereby may cause our patient an irreparable injury. Therefore, in the cases with Type 1 meningitis, it is expedient to plan a two stage operation; 1, drainage external to the dura, 2, incision of dura and drainage internal to dura. The first stage operation will only be needed when an extradural abscess is unassociated with a subdural or brain abscess, as both the spinal fluid findings and symptoms will show immediate and continuous improvement after drainage of the extradural abscess. However, when the extradural abscess is associated with a subdural or brain abscess, there will be little or no improvement following the first stage operation. A slight but temporary improvement of the general symptoms should not be allowed to misguide us as to the pathology

present, especially when there is not associated a marked and continuous reduction in the spinal fluid cell count. This would indicate that there is still present a suppurative focus causing meningeal irritation that had not yet been located and we are then justified in performing the second stage operation.

5. *Labyrinthitis.* Only eight cases of manifest labyrinthitis, i e., cases with spontaneous labyrinthine symptoms, were observed which was less than 1% of the total number of suppurative media cases. No doubt many cases of latent or chronic labyrinthitis had been overlooked for want of not having had the labyrinthine tests performed. Of the eight cases, five were acute, two serous and three suppurative and three were paralabyrinthitis cases. We are unable to differentiate a serous from a suppurative labyrinthitis except by the outcome of the cochlear and vestibular function which is completely and permanently destroyed in a suppurative labyrinthitis. Labyrinthitis is characterized by involvement of the end organ of the cochlear nerve which results in deafness and tinitus and by involvement of the end organ of the vestibular nerve which results in loss of equilibrium, vertigo, nystagmus, nausea and vomiting. In labyrinthitis, the eyes are pulled over towards the side of falling by the slow component of the spontaneous nystagmus, while the quick component is towards the normal side. In cerebellar nystagmus, the slow component is away from the side of the lesion and the quick component is towards the lesion. In a labyrinthine nystagmus, the duration is but two or three days while a cerebellar nystagmus lasts longer and tends to increase in severity whereas the former diminishes. In labyrinthitis, the arms held out in front of the body will deviate toward the side opposite the direction of the spontaneous nystagmus and the direction of the deviation and of the falling will change with the change of position of the head. While we have disturbance of equilibrium in lesions of the labyrinth and cerebellum, in the former, it is an end organ lesion and in the latter a central lesion. The distinguishing feature is that the falling, past pointing, and deviation of the extremities in labyrinthitis may be influenced by a change of position of the head.

The treatment of labyrinthitis is a question of diagnosis. The acute serous type associated with acute suppurative otitis media should be treated as we treat the latter condition, viz, free incision of the drum membrane, to secure external drainage; inflation of the eustachian tube to secure internal drainage, hot fomentations to ear, cathartic and rest in bed. If this does not provide adequate drainage, or if acute mastoiditis is present, posterior drainage should be obtained by simple mastidectomy with antral tube drainage. We do not operate on the labyrinth in the acute serious type, i. e., where there is not complete suppression of vestibular and cochlear function. However we do operate on the labyrinth in acute suppurative labyrinthitis in which there is a complete suppression of the vestibular and cochlear function associated with symptoms and spinal fluid findings of meningitis. It is here that Neumann's labyrinth operation is indicated with the establishment of drainage of the meninges at the internal auditory meatus.

In the paralabyrinthitis cases, a radical mastoid operation is indicated. If necrotic bone of the bony capsule of the labyrinth is found it should be removed taking care that the intact membranous labyrinth is not disturbed.

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BRAIN INJURIES AND ESPECIALLY INTRACRANIAL HEMORRHAGE AND CEREBRAL EDEMA IN THE NEW-BORN.*

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Within recent years, interest in the subject of intracranial hemorrhage in the new-born has been stimulated by the observations of numerous investigators. After Mr. Little, in 1843, in his first monograph upon the subject of cerebral spastic paralysis, stated that the chief causes

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were lack of cerebral development of obscure origin and a former meningo-encephalitis, the diagnosis of Little's disease has comprised those hopeless conditions almost to the exclusion of the ones due to an intracranial hemorrhage at the time of birth; Mr. Little became well aware of this most frequent cause as indicated in his second monograph upon the subject in 1862, but unfortunately these later observations have been practically overlooked in the literature. In recent years, the studies of Green, Grady, Sidbury and Warwick have been very instructive.

A number of years ago, in 1913, I became interested in the chronic condition of cerebral spastic paralysis in its various forms with and without marked mental impairment and it was very impressive at that time and during the past ten years to note repeatedly in the histories of a large percentage of these patients—the ones having an increased intracranial pressure as disclosed by the ophthalmoscope and more accurately by the spinal mercurial manometer—that they were chiefly first born, full term males, the majority of them having had a difficult prolonged labor with and without the use of instruments and that during the first week and even two weeks after birth, they had been considered rather drowsy and stuporous with a lack of the normal demand for food and even refusal to nurse and in many of them the history of twitchings of the orbital muscles and of the hands and legs or even generalized stiffenings to the degree of convulsive seizures. After a period varying from several days to two or three weeks, the baby rapidly improved and was considered a normal child at the end of one month after birth and continued to be so apparently until several months later—usually about the seventh or eighth month, when it was observed that the child was not holding up its head nor attempting to sit up and frequently at this time a spasticity appeared in the arm and leg of one or of both sides; later, when the child did not walk or talk or, if at all, until months after the usual time, this chronic condition developing in an apparently normal child was most puzzling and frequently the diagnosis of Little's disease implied a tainted heredity and lues as the etiological factors in the lack of development.

The chief reason for this confusion in the diagnosis has been the vagueness and even lack of marked clinical signs indicating the acute lesion within the first ten days after birth in the majority of these patients, with the exception of the extreme cases in which the intracranial hemorrhage and the associated cerebral edema were most extensive and to a degree endangering and even causing their early death; the milder cases of less extensive hemorrhage survive after a period of ten days to two weeks during which the clinical signs of a possible intracranial lesion are most meagre. (This clinical difficulty of accurate diagnosis of the acute condition in the newborn will be considered later in the paper.) And the second factor in the tardy recognition of the intracranial lesion in the chronic cases has been due to the fact that the babies surviving the acute condition have been considered, and often are apparently, normal for a period of months after birth until the seventh or eighth month and even later when the spasticity of one or more of the extremities of varying degree appear—the child not holding up its head, sitting up and later walking and talking as it should,—at a time when the patient has often drifted to another physician other than the obstetrician, so that the vague clinical signs of the intracranial condition at birth, even if suspected, are not correlated with the later clinical findings of physical and mental retardation, and therefore the diagnosis of the later chronic intracranial lesion has at best been only a tentative one and more often the condition has been ascribed to some mysterious lack of development of cerebral tissues, heredity, lues, etc.—hopeless conditions and much to the dismay of the parents on account of the fear of having future children.

That the condition might be the result of an intracranial hemorrhage at the time of birth was very improbable, as it was believed and taught that intracraniel hemorrhage was of such an extensive character and of such great danger to the life of the new-born that the baby usually did not survive. The earlier study therefore of the acute condition of intracranial hemorrhage in the new-born was limited chiefly to post-mortem examinations and therefore to the study of the extreme condition sufficient to cause death at the time of birth or within several days after birth. During the past ten years, I have had the opportunity to examine both at operation and autopsy, the brains of a large series of these chronic cases of cerebral spastic paralysis having

a definite increase of the intracranial pressure and the pathology has been practically the same —"wet" edematous brains under varying degrees of increased pressure and along the supracortical veins in the sulci has been demonstrated the cloudy whitish new-tissue formation with a fibrous thickening of the walls of these veins—the organization-residue of a former layer of supracortical hemorrhage which had occurred most probably at the time of birth and of larger amount than could be entirely absorbed by the natural means of excretion. Since it has now been proven that over 80 per cent of the cerebrospinal fluid is normally excreted through the walls of the supracortical veins, the partial blockage of this main channel of excretion of the cerebrospinal fluid by the organization-residue of a former hemorrhage in these patients explains the "wet" edematous conditions of the brain under varying degrees of increased pressure and the resulting spastic paralysis in its various forms associated with a mental retardation of varying degree. The treatment of these chronic conditions can, at best, be directed only toward an improvement—lowering the increased intracranial pressure, the use of orthopedic measures and mental training.

During this same period of ten years, I have had the opportunity of examining in consultation and treating 46 new-born babies within the first ten days after birth. The signs of an acute severe intracranial lesion were very evident: stupor and coma, refusal to nurse and convulsive twitchings. Lumbar puncture in these early cases revealed bloody cerebrospinal fluid under varying degrees of increased pressure and repeated lumbar punctures of spinal drainage in the milder cases or the modified subtemporal decompression of cranial drainage in the more severe cases made possible a recovery of life in a small percentage of them. One of the patients in this series on the third day after a difficult instrumental birth appeared to be a normal baby with the exception of spasmodic twitchings of the left orbital muscles two and three times each hour; careful neurologic examination was negative, but a lumbar puncture was advised merely to confirm these negative findings so that the parents could be assured that no intracranial complication had occurred. Two hours later and before the lumbar puncture was performed, the baby suddenly died and at autopsy there was disclosed a supracortical hemorrhage of over one inch in thickness upon both cerebral hemispheres—the longitudinal sinus having been torn at the posterior margin of the anterior fontanelle. This case and the mildness and even apparent lack of the definite signs of severe intracranial hemorrhage in the other acute cases as disclosed at both operation and at autopsy led to the belief that possibly an intracranial hemorrhage of mild degree at the time of birth did not produce marked clinical signs of its presence owing to the less highly developed cortical cells at this early age and that possibly the complication of an intracranial hemorrhage at the time of birth was of more common occurrence than ordinarily suspected. To determine the frequency of this complication in the new-born, permission was obtained from Doctors F. A. Dorman and Wilbur Ward to perform a routine lumbar puncture upon a series of consecutive new-born babies at the City Hospital, Welfare Island. In the first series of 100 consecutive new-born babies,* there was bloody cerebrospinal fluid in nine; two of these babies died and at autopsy there was revealed a large ventricular hemorrhage in one and a mild subarachnoid hemorrhage with extensive cerebral edema in the other. Repeated lumbar punctures of spinal drainage at intervals of 12 hours were sufficient to make the cerebrospinal fluid clear and under normal pressure in the remaining seven cases. No instruments had been used in these nine cases; one was a version with breech extraction; in two, the cord was about the neck. The coagulation time was normal in each of the nine cases.

In a recent report of this first series of 100 consecutive new-born babies,* the statement was made that no untoward signs had been observed as the result of the test of lumbar punctures; since this report, however, one case has occurred meriting discussion; at consultation with Doctor S. Swift concerning a new-born male of four hours of age having a large cephhematoma of the left parietal area following difficult forceps delivery, a lumbar puncture was advised to ascertain the presence or not of an intracranial hemorrhage—suspected on account of an apparent fracture of the right vault, divergent strabismus and a possible weakness of the left side of the body. The general condition was a seri-

*Sharpe, William. Intracranial Hemorrhage in the New-born. J. A. M. A. Vol. 81, No. 8, August 25, 1923

ous one in the presence of shock and yet the cry was lusty. After the lumbar puncture and the removal of 5c.c. of bloody cerebrospinal fluid under a pressure of only 3mm. Hg., the baby's general condition rapidly became worse in that the shock increased, the cry weakened, the cyanosis deepened with cold extremities and pinched facies and shallow respiration. Death occurred 8 hours after birth. Necropsy disclosed a large subpericranial hematoma of at least 8 oz. over the left vault and a multiple linear fracture depression of the entire right parietal bone. Along the supracortical veins in the sulci of both hemispheres was a small amount of dark free blood and not of sufficient amount to cover the convolutions. No gross laceration was found. This case is very suggestive. In the presence of definite shock in the new-born, just as in adults having acute brain injuries, no examination and tests should be performed until the shock has subsided; the treatment should be directed entirely to the shock and if the patient cannot survive, surely no examinations and tests, and by no means an operation, will be of aid, but rather an added shock. The fact that the spinal pressure was only 3mm. Hg., together with the clinical picture, confirms the diagnosis of shock in this case. The post-mortem findings of free blood along the supracortical veins in the sulci confirm the observations made in other acute cases and support the belief that if this free blood cannot be entirely absorbed, then an organization-residue occurs in situ with the resulting partial blockage of the excretion of the cerebrospinal fluid—the usual pathology in the cases of cerebral spastic paralysis having an increased intracranial pressure and due to an intracranial hemorrhage at the time of birth.

The second series of 100 consecutive new-born, upon whom a lumbar puncture has been performed by my associate, Dr. A. S. Maclaire, within 24-48 hours after birth, has just been completed. Bloody and blood-tinged cerebrospinal fluid was disclosed in 13 babies—that is, in 13 per cent and there was no fatal case. In the blood-tinged or bloody spinal fluid, repeated lumbar punctures every 24 hours were performed until the fluid was clear; in only 3 cases was this not accomplished. One case, a medium forceps, the second of a pair of twins, at the first puncture had a manometric reading of 8 mm. Hg.; 6 cc. of bloody spinal fluid was removed the first day; four more punctures were performed at 24-hour intervals and only 1 or 2 cc. was obtained at each tap and the child left the hospital with the spinal fluid still blood-tinged. The second case was the child of a 4 plus syphilitic woman who had been in labor five days and finally delivered as a breech; the initial spinal pressure was 6 mm. Hg. and 5 cc. of bloody spinal fluid was removed the first day; two more taps were made 24 and 48 hours later when only a few drops of bloody fluid escaped; this case also never had a clear fluid during its hospital residence. The third case was that of a face presentation; the first manometric reading was 4 mm. Hg.; only 1 cc. of bloody fluid was obtained on lumbar puncture; another puncture 36 hours later yielded a few drops of spinal fluid which was less bloody than the initial tap showing that absorption had well progressed and that the hemorrhage was probably extremely small. The second case showed twitches of the hands and the third case had twitches of the face, mouth, hands and feet, also cyanosis of the face; the twitches ceased after the initial tap in the second case and on the fourth day in the third case.

In four cases, one puncture was sufficient to drain the hemorrhage in that the second puncture was clear. In two cases, two punctures were required; in one case, three punctures were necessary; in another, four punctures were performed and in still another five punctures.

The intracranial pressure in the 13 bloody cases, ranged from 4 mm. Hg. to 26 mm. Hg. and was as follows: 4 mm. Hg. in five cases; 6 mm. Hg. in one case; 8 mm. Hg. in three cases; 10 mm. Hg. in two cases; 12 mm. Hg. in one case and 26 mm. Hg. in another. The blood-clotting time estimated in nine within the first 24 hours, two between 24-28 hours, one at 53 hours of life and one 15 minutes after death and in these 13 cases it was as follows: 7 minutes in one case, 7½ minutes in two cases and in the other 10 cases the time ranged between 4 to 6½ minutes. (The normal is 5 to 8 minutes.) In one of these cases the mother had a 4 plus blood Wassermann reaction, while the child's cord Wassermann was negative. In another, the mother had a 1 plus blood Wassermann and the child was negative. Of these 13 bloody cases, 6 were normal cephalic deliveries, 3 prolonged labors, 2 of which terminated as

cephalic presentations, and 1 as a breech; 2 medium forceps deliveries, one of them the second of a pair of twins, one a face presentation and one the child of an eclamptic mother. The anterior fontenelle in these 13 bloody cases was flush in seven cases, bulging in three, depressed in one, and not recorded in two. The anterior fontenelle was in no way indicative of the spinal pressure obtained. Only two of these babies had the mildest of signs, namely, twitchings of the face hands or feet and cyanosis of the face. None of the marked signs, such as convulsions, stupor, spasticity, failure to nurse, etc., were present. Eight were first born, three the second, one the seventh and one the twelfth; twelve were males and one was a female. One case, which was a medium forceps delivery, had bloody spinal fluid and developed jaundice on the third day with a temperature of 102 degrees F. The blood clotting time lengthened from 4½ minutes to 6 minutes. Four lumbar punctures were necessary to obtain clear spinal fluid. Further study must be made of the relationship, if any, between intracranial hemorrhage and jaundice and the allied icteroid conditions; whether the absorption of hemoglobin of an intracranial hemorrhage can produce the clinical picture of a mild degree of icterus has not been definitely proven.*

CONCLUSIONS

1. The fact that bloody and blood-tinged cerebrospinal fluid was found in 9 per cent in the first series of 100 consecutive new-born and in 13 per cent in the second series would tend to indicate a much more frequent intracranial lesion at the time of birth than ever conceived.

2. Lumbar puncture as a diagnostic and therapeutic measure has proven to be a safe procedure in these series in the absence of shock, and it is advocated in suspected and doubtful cases having the mildest signs of intracranial hemorrhage and cerebral edema.

3. Repeated lumbar punctures of spinal drainage are advocated every 6 to 24 hours in cases having bloody cerebrospinal fluid under varying degrees of increased pressure; if spinal drainage fails to diminish the blood concentration and to lower the increased pressure of the cerebrospinal fluid, then a modified subtemporal decompression of cranial drainage is indicated.

4. Death results from extensive intracranial hemorrhage and cerebral edema in the newborn; unless the hemorrhage can be entirely absorbed by the natural means of excretion without any resultant organization-residue, unrecognized and therefore improperly treated cases of the milder degrees of intracranial hemorrhage develop later, in a large percentage, some form of cerebral spastic paralysis with varying degrees of mental impairment. This chronic condition can at best be only inproved, whereas the acute condition at birth is the ideal time for treatment and many of these acute cases are now being overlooked.

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MENTAL CONDITIONS ASSOCIATED WITH DISEASE OF THE BRAIN AND CRANIAL NERVES OF SPECIAL SENSE*

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I.

The brain is structurally the most complex organ in the human body. It is for this reason the most highly specialized physiologically. Other specialized organs such as the lungs, the liver or the kidneys possess each just one function peculiar to itself which is performed by that entire organ. Not so in the case of the brain. Its functions are not only diverse and manifold, but so extensive and all embracing that no part of the human organism can function properly without its domination and regulating influence. Moreover, no part of the perceptible physical universe is beyond the reach of its impressionability and conception.

These facts become more evident when we seek to determine brain function from its appreciation of the various stimuli applied to the periphery and its ability of their interpretation and evaluation. General stimuli, such as tactile and thermal stimulation, or special sensory concepts, such as appreciation of aromas, color, taste, sound or weight in their various degrees and shadings, are each represented by special centers in the brain-mass which is arranged in strata or anatomical levels, each level having a physiology all its own. These are closely connected and interlaced with every other center by association fibers which, normally, transmit instantaneously and most accurately the nature of the slightest peripheral stimulus to the upper

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cortical centers for discrimination and judgment. These centers constitute the sensory cortex.

Motility is the response to peripheral stimulation from the environment. Motion is governed by motor centers grouped in definite areas in the brain cortex, which control the action, extent and intensity of muscular movement in the execution or application of effort.

The known sensory and motor cortical areas are spheres of consciousness of sensation and motion, respectively. But there are many other functions of which the brain is capable, such as mentation, ideation, calculation and emotion, the center groups or precise areas of which are as yet unexplored. These are called the silent areas of the brain. They will yield their secret gradually as we go on unrestrained, thinking and searching further into the structure of the universe, unearthing and unfolding hitherto unobserved forces and phenomena. The human brain is capable of imagination, thought and inquiry. It is the co-ordinate balancing of this trinity that enables man to adapt himself to the environment in which he lives, moves and finds his being. Co-ordinate adaptation and fitness constitutes sanity; that is, normal mentality controlled by a normal brain.

There are in the brain organs such as the pituitary and pineal bodies, the lenticular nucleus and others which influence metabolism, growth and muscle tone through interconnecting pathways of the sympathetic or automatic nervous system with extracranial internal and external secretory glands. The origin of the sympathetic nervous system is from the sacral, dorso-lumbar and cranio-cervical levels of the cerebrospinal axis. It supplies and regulates the activity of all involuntary muscle organs, the viscera, the genital apparatus and the entire vascular system. It controls the action of internal and external secretory glands, vascular and emotional reactions.

The anatomical structure and the functions of the cerebellum and the medulla are too numerous to mention in this paper, except that they contain centers for locomotion, equilibrium and regulate respiration, body temperature, vascular tension, deglutition, palate and vocal cords tonus and sympathetic nervous reactions.

The above anatomically proven and physiologically tested facts have been briefly reviewed for the purpose of calling attention to the numerous parts and physical components necessary in the construction of the human thinking machine —the brain. Its innumerable cells, their complex arrangement, their grouping and stratification, their atomistic and molecular qualities, visible and invisible, known and unknown, evolve phenomena of consciousness in each individual according to his particular conception powers and qualities of impressionability from the environment. Ths consciousness is continuous and is more partial to certain impressions than to others by peculiar predilection and selection. The selectivity or selective quality of consciousness is responsible for the retentiveness of images or sensations—memory. Thus there is a direct and constantly intimate relationship between the brain and consciousness. The one bears to the other the relation of cause and effect. Just as muscular irritability results in a state of contractility, so cerebral activity results in consciousness; that is, thinking goes on. Or, as James puts it, "The immediate condition of a state of consciousness is an activity of some sort in the cerebral hemisphere."

In the course of human development and growth, mental acuity and stability are constantly in a process of acquisition of impressions. Normal mental states are the product of a normally constructed and co-ordinately developed brain. Conversely, an abnormal mental phenomenon is an expression of a defective brain cortex, or, rather, incoordinate arrangement of brain cells; for there is nothing in the cranial vault but brain tissue. "All nervous centers," says Dr. Hughlings Jackson, "from the lowest to the very highest (the substrata of consciousness) are made up of nothing else than nervous arrangements, representing impressions and expressions . . . I do not see of what other materials the brain *can* be made."

II.

Since coordinate mentality appears later in the course of development, it follows that when a degenerative process in the brain sets in, mental function is the first to suffer. The known disintegrating processes in the brain are:

1. Vascular changes.
2. Toxic degeneration.
3. Exhaustion.
4. Inflammation due to infections.
5. New growths.
6. Trauma.

It behooves medical men to study the symptomatology of these conditions in their entirety and to regard the mental changes associated with brain disease as fully, if not more, important as paretic states and other greater or lesser physical disabilities. Indeed, in many instances an alteration in the patient's mental condition is a forerunner to a physical disaster. In arteriosclerosis of the brain, which really causes a gradual but progressive malnutrition of the brain substance, the highest cortical function—mental agility—suffers first. The thought process becomes slow, memory is dull, movements are deliberate, awkward or clumsy, and paraphasias or temporary and recurrent aphasias appear.

The importance of eliciting a detailed history in presenile or senile patients cannot be overemphasized. Inquiry should be made as to irritability, impatience, insomnia, confusional states, amnesias, vertigo and headaches. One need only to recall the blood supply of the brain and the pathology resulting in its cellular elements from an impaired arterial supply or venous return, and one will readily comprehend the dangers with which arteriosclerosis of the brain is fraught. While vascular deterioration is a generalized condition, it is frequently regional in its distribution. The renal, the coronary and the cerebral blood vessels are the most vulnerable. But in no instance is the mischief wrought by atheroma and thrombosis as great and as disabling as in the case of the brain because, firstly, in the brain vascular anastomosis is scant; and, secondly, because of its extremely delicate and complex cellular arrangement and organization, the least anatomical damage or nutritional decline, results in an extensive impairment of the highest and most delicate function—mentality. The alert examiner will recognize the extent of the malady more distinctly from the early appearing mental change or clouding of consciousness than from an increased knee jerk or a reduced Achillis reaction, which make their appearance much later. The early recognition of cerebral vascular changes is more than of academic value. A careful study of arterial tension, retinal findings and changes in the patient's mental attitude and personality is a reliable guide to prophylactic, hygienic and medicinal therapeutics.

III.

Poisons have a destructive effect on all tissues, especially on neuronic structures. Their high functions are readily impaired by the deleterious agents in the blood stream which carries nutrition to and removes waste products from every cell and fiber in the nervous system. The irritating molecule, as it comes in chemical relation with the nerve cell, produces edema and swelling of the cell, which if not absorbed, is followed by impoverishment of the protoplasmic element, and later, as it invades the chromatin substance in the cell body, affects ultimate cellular degeneration. This is briefly the chronology of the death-dealing process of toxic poisoning. Alcohol, narcotics, diabetes, arsenic, mercury, lead, and various gases are some of the most common toxic agents producing psychoses of various degrees and duration, depending on the absorptive power of the brain and meninges, which react to these toxins with edema and swelling. The acute irritative stage is manifested by headache, restlessness, mental irritability and insomnia, which are the earliest appearing signs in toxic cases. Early recognition of these phenomena aid in tracing the origin of cause and therapeutic application. Further aggravation of toxic processes may produce more intense mental manifestations such as delusions, hallucinations, euphoria, depression, epileptiform seizures and coma, all of which are indices of the pathological changes taking place in the midbrain and cortical substance. It must be stated at this juncture, however, that, while a virulent toxic saturation will destroy even the most resistant organism, the usual type of personality that succumbs to alcohol and narcotics is essentially of an inferior neuronic texture. Alcoholics and narcotic addicts usually come from the ranks of constitutional inferiors and inadequate personalities who shrink from contact with the rugged edges of strenuous life. They escape this by seeking leisure and repose in the cup of joy or narcotic oblivion. Whether their susceptibility is due to a general constitutional defect or an inferior brain, is a question open to discussion.

IV.

The mental disorders not due to a recognizable organic cause, do not properly come within the scope of this discussion. Yet, must they be alluded to here: firstly, in order to emphasize

the importance of the invisible etiology which causes them; and, secondly, to stress the significance of the early appearing symptoms, which, if recognized as danger signals forewarning a brain-storm, by anticipative measures, will save a life otherwise doomed to a living death, temporary or permanent. In the study of these cases one must begin with the great-grandparents of the patient. Atavistic taints of mental disorders may remain latent in two or three succeeding generations of apparently normal members of the family and then show themselves in no unmistakable form. The affected offspring is said to be susceptible to mental disease through an inherited tendency. Still, this susceptibility is frequently recessive to the normal if the provocative factors of insanity are anticipated and met early. The main factor among the exciting causes of atavistic insanity is exhaustion. Exhaustive states not infrequently follow in the wake of febrile diseases, malnutrition, overwork, mental stress, loss of blood, pregnancy and parturition. Excessive waste products accumulated in the system and not absorbed or eliminated for the want of rest, act as irritants to the delicate nervous structure, causing cellular hyperactivity first and sluggish mental reactions later.

These abnormal mental states may not occur in individuals in whom heredity or atavistic susceptibility does not exist as a predisposing factor to a mental upset. No definitely visible pathology can be said to be present in the insanities not directly due to organic lesions. The mental disorder is attributed to an inferior nervous system which is susceptible to structural disarrangements and cellular instability.

Cerebral meningitus frequently leaves its damaging effect upon the mental condition of the patient. Encephalitis, though its residium is manifested mostly by muscular rigidity, tremors and various palsies, almost always involves also mentality. There are no manifestations of mania or dementia in these cases, but there are definite mental changes which are directly due to the meningeal or cerebral disease from which the patient had recovered. The essential difference in the after effects on the patient, between meningitis and cerebritis, is that in the former the extent of the residual disability depends on the variety of the meningeal infection, the degree of involvement, the location of the inflammatory process and the manner of infection; that is whether by extension or by the vascular route. In most cases of recovered meningitis the only residuals are headache, periodic mental fatigue and instability. Whereas, in encephalitis, which is a parenchymatous brain disease, the infection in recoverable cases is invariably localized and residual physical disabilities depend on the locality involved. Yet, because of the erstwhile destructive inflammatory process, mentality remains different and abnormal.

V.

Perhaps in no other brain disease is a careful analysis of psychical changes as important for diagnostic and even for localizing purposes as in brain tumor. Certain localities cause special mental alterations. Prefrontal lobe tumors tend to produce euphoria, facetiousness, flight of ideas, and a tendency to joke and frolic. Frontal lobe tumors produce the same mental changes to which are added impairment of attention, difficulty of perception, a slowing of the thought process and memory defects, though there is no apparent clouding of consciousness. Other mental symptoms are lassitude, listlessness, apathy, and lack of initiative. Hallucinations of smell indicate olfactory tract involvement. Hallucination of sight points to occipital cortex localization, while those of sound, for temporal lobe involvement. As is well known, severe headache is a prominent sign of brain tumor. Patients suffer intensely during a paroxysm, and yet when relieved for a while, they do not seem to worry over their condition. Other patients show paranoid trends, depressed states and even melancholic suicidal tendencies. The latter appear usually in small tumors located deep in the cortex which cannot be localized by neurological tests. Some patients are excitable, irritable, capricious, while others appear to be entirely unconcerned with the outside world. They are disoriented as to time and space. Thought process is slow and sluggish; they are indifferent and apparently oblivous to surroundings. Some observers hold that "in right-handed tumors, the psychical disturbances are more frequent."

The psychic phenomena appear far in advance of focal symptoms. Their early recognition is of decided diagnostic value, even though the pathological process may at this time not be localizable, or, if the tumor is localized, it may not be removable by surgical means.

Moreover, in cases of frontal lobe tumors which are removable and the patient makes a full recovery, the mental disorder persists. These patients are apprehensive, irritable, shunning society, introspective, sensitive, fretful, emotional and amnesic. While they are free from headaches, vertigo and vomiting, they complain of insomnia and restlessness. They are not infrequently paranoid and melancholic. These mental defects can be due to nothing else than to cellular disarrangement caused by the encroachment of the removed neoplasm.

Such and similar persisting abnormal mental states follow also recovery of paralysis caused by vascular accidents, especially cerebral hemorrhage. The mental irritability associated with hemorrhage causing hemiplegia is well known. After a maximum absorption of the hemorrhage the paralysis may clear up almost entirely, but the mental defect brought about by the brain lesion persists.

VI.

Traumatic psychosis may follow injury to the head directly affecting the brain. Not all head injuries involve the brain, but trauma to the head may produce a psychosis even though there is no demonstrable brain pathology. The shock of the trauma, accompanied by a short period of unconsciousness appears to be the offending cause. The individual becomes desensitized for a greater or lesser period of time. Headache, dizziness, irritability, impatence and fear of permanent disability and helplessness are the cardinal features which make up the disturbed mental state. This may follow some time after the injury and gradually produce sensory and motor disturbances which are exaggerated through fear and frequently render the victim inefficient and helpless. A striking change in the personality takes place. The individual becomes moody, depressed and emotional. He is intolerant of ordinary noises and even familiar sounds. He feels constantly fatigued and resents any suggestion that he make an effort to resume some form of light occupation, if only for pastime. He prefers isolation and inactivity, thus confirming his phobias and fixing his disabilities.

Many of these patients are stigmatized as malingerers, especially where compensation for injury is a consideration. Yet must it be recognized that shock alone is capable of producing these abnormal mental phenomena which are often observed also in post-operative cases. These individuals are of decided neuropathic leanings in whom the trauma acts as an exciting cause of the psychosis. The psychosis, according to certain observers, is attributed to vasomotor disturbance in the brain, which may account for this complex.

VII.

The olfactory, the optic and the auditory nerves are purely sensory, each pair possessing a special sense; that of smell, vision, and audition, respectively. Anatomically they are made up of crossed and uncrossed fibers from the cerebral hemispheres. They differ from all other nerves in that they are practically prolongations or lobes of the brain. Structurally, these nerves are less resistant in consistency than peripheral nerve trunks.

It is obvious that each of these nerve organs has a specific physiology. Disease processes, likewise, produce specific disturbances of function. The time allotted to our theme permits only a remark or two on the mental conditions associated with disease of these cranial nerves of special sense.

Numerous psychogenic olfactory disorders are cited in the neo-psychiatric literature. Hallucinations of smell and olfactory auras in certain types of the epilepsies are known. But one does not encounter clinically or in the literature instances in which disease of the olfactory mechanism is causative of mental disorder. The relation between offensive odors and vomiting in neuropathic individuals, or the manifestation of psychogenic reactions in hay fever patients, must be construed as causes of olfactory sensitization rather than a result of disease. Impairment or loss of smell resulting from ethmoiditis, fractures or local olfactory disease does not produce a mental change.

Quite different is the case in the instance of optic nerve disease, especially in retinal hemorrhage. Apparently owing to the suddenness of the vascular accident, the patient suffers a tremendous shock. He becomes morose, depressed, melancholic and extremely irritable. These patients seek retirement and seclusion. For months they decline to see their friends and prefer hermitism. Even where there is no retinal detachment and vision is good in the other eye, the patient broods over the occurrence and is given to outbursts of exasperation and anger.

Insomnia is the rule. Like cerebral hemorrhage cases, these patients turn night into day for sleep. For years after maximum absorption of the hemorrhage has taken place, a mental change is evident.

Even greater mental changes and actual psychosis appear in involvement of the auditory nerve. The intricate anatomy of the acoustic apparatus and its correlation to other mechanisms such as head movements, sound alterations, respiratory changes and psychical reactions, make the study of the relationship of mental conditions to auditory involvement a quite comprehensive one. The most familiar auditory phenomenon that is associated with psychical disorders is tinnitus. As a rule, when not due to middle ear disease, tinnitus is a manifestation of a degenerative change in that part of the brain which contributes to auditory pathways, chiefly the quadrigeminal and the median geniculate bodies. In cases of severe tinnitus, even when hearing is but very slightly involved, the irritative brain lesion which causes the head noises is an indication that similar degenerative processes involve also psychic spheres. Hence tinnitus is only a subjective sensory manifestation of the objective psychic disorder. The irritability, depression, restlessness, emotionalism, paranoid and melancholic states which patients with tinnitus show, may be due to the same cause which produces the tinnitus. This view is supported by the fact that many patients who have had head noises for many years and deafness results only after the auditory irritative lesion had become a destructive one, do not show a psychical change until quite late after the tinnitus had appeared. The vulnerability of the auditory nerve makes it susceptible to a degenerative change, while the resistant psychic centers do not yield until much later. Thus tinnitus and psychosis may co-exist as a result of the same cause.

SUMMARY

1. Every brain lesion is accompanied by a greater or lesser mental defect.

2. Irritating poisonous substances coming in chemical relation with brain cells, if not absorbed or eliminated, produce a pathological change in the cell elements.

3. Inferious nervous system, under stress, are subject to cellular instability, structural disarrangement and mental upset.

4. Change of personality or psychic alterations appear far in advance of focal symptoms in every case of progressive brain pathology.

5. Normal mental states are the product of a normally constructed and coordinately developed brain. Conversely, an abnormal mental phenomenon is an expression of a defective brain cortex or incoordinate arrangement of brain cells.

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CHINA AND CHINESE THERAPY*

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China, with almost a fourth of the world's people living in it and its dependencies, presents a subject of great interest and attraction. It is a country of great antiquity, a civilization probably antedating that of any other, with the exception of Egypt and Mesopotamia, and a government that has carried on continuously for forty or fifty centuries. Within the last few years she has changed her system of government from that of a monarchy to that of a republic. Since this change, she has wobbled and staggered and lurched and, it appears, has well nigh fallen, but still she strives to adjust herself to Western ideas and modern methods of thought. Be it so, she has a great deal to commend her to the thoughtful consideration of modern people for the perpetuity of the government she formerly had and for her contributions made to the list of inventions, which we call, modern. A thousand years before Gutenberg of Mayence, Germany, invented movable type, the Chinese were using them, and were printing from characters engraved upon the faces of stone blocks. In the fifth century A. D. this race invented the mariner's compass, and a thousand years before Europe knew anything about gunpowder, this same race was using it in firecrackers and fireworks of various kinds. Silks were used by them at a time of such remote antiquity that it is not known when they first cultivated the silk worm. The historian, Sdwird Gibbon, in his work "The Decline and Fall of the Roman Empire," says that during the palmy days of the Empire silk was worth its weight in gold and was imported from China with great danger and

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great cost. The ceramic art of China is not equaled in the world, with the possible exception of Japan, and her porcelain factories have been running since about the third century A. D. If you play chess, next time remember you are playing a Chinese game dating from about 1200 A. D. and that playing cards were also invented by them at about the same date. At a quiet evening game at home, next time you hear somebody say "Mah Jong" and the "jig is up" for you, as far as that particular game is concerned, blame it on to the Chinese, who invented it many centuries ago. Notwithstanding their inventive genius of the past, their present methods of doing things impress the traveler with their oddities and eccentricities, tinctured with amusement. Instead of the compass pointing north as the cardinal point, it points south. The man wears skirts and the woman pantaloons. Now some of you irreverent may say that it is getting that way in our country, but I feel assured in saying such is not the case. The Chinaman if he owns a horse, which is rare, and wishes to ride, mounts on the off side instead of the near side as we do. The military man wears two swords on his right side instead of one on the left. Instead of having pockets in his clothes he uses his hose for pockets. Instead of carrying a watch concealed somewhere in his clothes, he wears two pinned on the outside of his garment with both open faces showing. He begins to read his book by going to the last page and reading from right to left instead of left to right. If he gets perplexed and puzzled and wants to think deeply, instead of scratching his head like some other races do, he kicks the clog off of his foot and scratches said foot on the sole to stimulate his reasoning powers. In building a house, the roof is first constructed, and the foundation is the last thing to be completed. The kitchen occupies the front of the house, the parlor the back. The carpenter draws the plane toward him to dress the lumber, and the teeth of his saw are set away from him, so that when he works he is always sawing in the direction away from himself. The Chinaman laughs at a funeral and weeps at a wedding. If he is so angry at an enemy that he would like to kill him, he commits suicide figuring that his ghost will return and torment his enemy so much that he will suffer more than by taking his life. In his temple service he burns incense to his favorite god, and makes offering of his money; not real money; he is too practical for that, but gilded paper in imitation of genuine money. Now while he appears to us very odd in his methods, he thinks ours are just as queer. He is a great farmer inasmuch as his farm has been tilled for forty or fifty centuries and the ground appears to be as fertile as it ever was. The reason for this seems to be that he has made an intensive study of fertilizers and these have been diligently and laboriously applied from year to year so that the ground has not been robbed of its plant-raising properties. As a rule, however, instead of applying the fertilizer to the soil alone he applies it in some way to the plant itself. Naturally, it would be thought that a nation which has contributed so much in the way of agriculture, invention and art to the world; a nation which up to several years ago formed the largest empire that ever existed in the world, if we except the Russian, would as a matter of course excel in many other ways. Not so. There is a want of uniformity of tissue in this mighty realm, and owing to climate, geography, and natural circumstances combined with want of education in the great masses and an overriding superstition everywhere, this aggregation of peoples and provinces and countries falls far below our reasonable expectations. In briefly sketching this outline of impressions, I have had in view a background for their queer ideas in respect to medical therapeutics. Of all civilized countries of the present day, that lay claim to any degree of medical progress, this certainly is the strangest. Progress, if any, is carried on by some few physicians who have studied in America or Europe: the nearly 100 per cent of native doctors are ignorant, credulous and to a high degree superstitious. They are but one jump ahead of the barber or the butcher, and five jumps behind the tailor, builder, merchant and farmer. It seems that medicine is so implicated with superstitions of so many and various kinds, that it has never evolved to any appreciable extent. It is impossible to catalogue in a short paper many of their tenets of practice, but I shall enumerate a few of their methods and beliefs. At the head of their list of drugs, which are council-passed, as we may term it, stands ginseng. Now as far as I am able to discover or find out from investigation, this drug, accord-

ing to western belief, has no therapeutic value at all. The Chinese believe it the great sheet-anchor for all diseases, from an infected finger to tuberculosis. They believe that it gives strength and is a powerful tonic for the old. It is a great power in fevers and septic conditions, and is prescribed at times for almost any disease. It also seems that the Chinese believe in preventive medicine. I had never thought that, because of the fifty-seven different varieties of smell that assailed me in the narrow streets of Canton. But I have learned that if you stew the skins of black cats and dogs, black let me repeat, that it is a sovereign remedy, preventing smallpox, plague, fevers and eruptions. Musk is another remedy of great value in their drug list but it appears not to be valuable as a nerve remedy which many western therapeutists do believe. They have one drug which we can agree on—and that is rhubarb. This is cultivated and also gathered wild and is, of course, the best kind that is now obtainable in the world's markets. They use it for the same purposes that other nations do. In Chinese apothecary shops they have packets of silk which contain dragon's blood for sale. What this dragon is or what the beast looks like, I am unable to say. I have read that a dragon was a fabulous animal, or in the words of the farmer who saw a giraffe for the first time, "There is no such animal." Another interpretation of what a dragon is or may be is the fossil remains of some prehistoric animals. This explanation is somewhat far-fetched for the reason there can be no blood with these fossils, but for a fact, they do sell and use as medicine a solution of fine grindings from the fossil teeth and bones, which enjoys a high reputation for that "worn out" and "tired feeling." As is well known, the Chinese are the finest carvers of ivory in the world. The dust and fine particles are not allowed to go to waste but are carefully saved, and used to make a decoction, like our coffee is made, and is, according to them, a very valuable remedy for fevers. Powdered bark scraped from rattan is another common therapeutic agent made for fever. Cups made from the horn of the rhinoceros are used in which to make various solutions, to be taken for severe maladies. Also in these cups are placed ground skins and horns which are guaranteed to act as antidotes against the most powerful poisons and give to the patient the qualities of courage and endurance, which were possessed by the animals which wore the skins and horns. The hoofs of young deer are highly prized because they are believed to give the users great fleetness of foot and it is believed that in the interior of China the victor still eats the heart of his brave enemy to give him courage and fortitude and this is considered the highest compliment to the bravery of a fallen foe. One of their most cherished therapeutic treasures is a gum from certain trees that grow in the immediate vicinity of the grave of Confucius. Another choice drug is pills made of *pingan tan* which, taken at certain intervals, produces a calmness and tranquility of mind that alleviates the distress, the asperities and the difficulties of life. The druggist also keeps in his shop, medicine (composition unknown) which is guaranteed to cure women of vanity and men of talking too much. I should judge this to be a very popular remedy and I do not know what the druggist would say when he got out of it, unless "I have something just as good." Grasshoppers ground up to a dry powder and administered in suitable doses is regarded as a sovereign therapeutic measure in cases of anemia, chlorosis, tuberculosis and lack of vigor. When other means fail, a soup of scorpions adjusted to the symptoms in the case is given to lower fever and mitigate pain in the body and limbs. Their cure of dysentery merits attention from at least the standpoint of novelty, and that is thrusting a needle through the tongue. I never saw this treatment carried out but would judge it to be more drastic than the disease itself. One remedy that they employ seems to stand on the basis of reason and common sense—and that is a tincture made from iron filings and used as an astringent and styptic. Among a people of such limited general education, dominated by superstition and a desire to be free from foreign influences and modern conceptions, we naturally expect to find a people influenced by amulets, charms, and devices of various kinds to protect their mental and physical health. Such is the case, and probably the Chinese are more concerned than either the Indians or Egyptians. The doctors there believe in them as much as the people and his whole system of treatment savors of the superstitious and the mysterious. He is supposed to diagnosticate the sickness by the pulse alone, and if he cannot do so, he is classed with charlatans and fakirs.

If he calls to see a lady, she puts her arm out from under the couch hangings so that he only sees the hand and wrist and having felt the pulse for a short time, he suddenly makes his diagnosis and announces his treatment for the patient. Like the peddler and the barber, he does not keep office but goes about ringing a little bell, so that those desiring his services may avail themselves of them. It is a far cry from these crudities and mysteries of medical practice among the ignorant and superstitious, to the real scientific physician. The latter, though, forms such a trifle in the mass of such a great population that it is almost negligible. But times and conditions are changing in the Far East, not only politically, economically, socially, but even scientifically. Quite a number of men each year, scientifically educated in the few available up-to-date schools, pursue their education in the great universities and colleges of Great Britain, France and America. Our country has several schools, offshoots of our great scientific and medical schools, which have taken root in the land of China which comprises nearly one-third of the continent of Asia. It will take many years to educate enough Chinese physicians both at home and abroad to enlighten this seething mass of millions of people and lift them out of the darkness of mystery, superstition and the worship of idols. There is hope for a people who were dressed in silk at a time when our forbears in Europe were wearing the pelts of animals for clothing. But for their early advancement as compared to other nations, their later advancement is practically nil. At the present time probably the greatest iron and coal deposits in the world are in China. These are not worked to the extent of one-fifth of 1 per cent. In fact, great veins of coal outcrop from the mountain sides and are not even dug into. So few railroads and no way to get to market with the products. Most of their transportation is by the wheelbarrow, and on some roads that, in certain seasons, are ravines and quagmires. "Build no railroads nor let foreigners do it, for that will interfere with our ancestors' graves and with our ancestor worship," they say. So it is easily seen what great difficulties are to be met before China can be brought out into the sunlight of the twentieth century. She is trying to work out her destiny as a republic, instead of a monarchy, which under dynasties stretching back fifty centuries or more to times of fables and myths has been of late years, at times, totally inadequate. Other nations have suggested and helped and her endeavors have been encouraged. It is hoped that the present time is the crimson dawn of a brighter day that will shed its radiance on this land of strange contradictions on the other side of the world.

UPPER RESPIRATORY INFECTION IN CHILDREN*

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The morbidity and mortality in children from upper respiratory infection during the fall and winter months is nearly equal to that of the gastro-intestinal disturbances in the hot summer months. By upper respiratory infection we mean that condition usually called "colds" with its numerous complications. Nothing definite as to the causative organism has yet been discovered. We find various types of micro-organisms in different individuals. Whether these organisms are the true causative factors or whether some specific bacteria paves the way for these organisms is a matter of conjecture. What we do know is that these "colds" are easily transmitted and at times very infectious. The question of nutrition and body resistance play a negative role. We find this infection in children who are well nourished and kept in the most hygienic surroundings equally as frequent as in their less fortunate neighbors who are poorly nourished and live in poor hygienic surroundings. Who has not had the experience of seeing a person suffering from an acute upper respiratory infection infect all those with whom he came in contact?

The symptoms differ in different individuals. When we see the ordinary "running nose" with its mucous or mucopurulent discharge the condition is easily recognized, in other cases the diagnosis is not so easily made. There are some cases where the onset is sudden with very high fever, extreme prostration, vomiting, loss of appetite, yet on physical examination nothing definite is revealed except possibly a slight redness of the posterior pharynx. In other cases the redness of the throat is extremely marked, the

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tonsils and pillars are infected, there is redness of the soft palate making one suspect a scarlet fever except that there is an absence of the strawberry tongue, rash, and later the peeling. Some cases begin with severe vomiting, pain in the abdomen and diarrhea, a condition called by some "intestinal influenza," by others "winter gastro-enteritis." In a few cases with extremely high temperature there is only a redness of the eardrums with possibly a slight bulging which when incised yields only a small drop of serum.

The high mortality is due to the severe complications which follow the infection. The ear condition mentioned above may be the primary seat of the infection, but is generally due to an extension from the throat. The symptoms from middle ear involvement depend on the severity of the infection. One case which came under my observation had a daily rise in temperature to 106 with return to normal, making one think of a sinus thrombosis. When the drum is incised the temperature would come down to normal to again rise the next day. Daily incision of the drum membrane was necessary for a week before the temperature remained normal. Mastoid infections are common and seen by all. As a rule the infection in the upper respiratory region causes enlargement of the neighboring glands with or without suppuration. We have seen enormous enlargement of the glands of the neck following this infection. Some of these glands broke down and had to be incised. Retropharyngeal abscess may occur and it is a good policy whenever there is an obstruction to breathing to put the finger down the throat and feel for an abscess. In some of the cases there is a boggy feel due to the infiltration of the mucous membrane. We have seen several such cases, some of which finally developed a fluctative mass which had to be incised. While on the subject of gland enlargement let me again call your attention to an observation made by Dr. Brennemann several years ago. Dr. Brennemann found that in many so-called acute bellies, if a careful history is taken, the condition is found to be due to enlarged abdominal glands following an acute throat infection. We find these enlarged glands in the mediastinum by x-ray examination and it is easily possible for the abdominal glands to be likewise enlarged.

Some of the cases of upper respiratory infection may simulate a meningitis. There may be a marked rigidity of the neck with opisthotonos. This condition may be due to a true meningitis, especially of the influenza type or may simply mean arneningeal irritation or meningismus. In these cases lumbar puncture usually only yields a small amount of clear fluid with very few cells and negative protein tests. We have found this repeatedly in cases which only had red ears but a rigid neck, opisthotonos and slightly bulging fontenelle simulating a meningitis. Probably the most serious complication is broncho-pneumonia, especially in the very young, and warrants an early diagnosis. Physical findings differ at various times. We usually get dullness, bronchial or broncho-vesicular breathing with fine crepitant or subcrepitant rales. The findings may vary from day to day, may be localized in small areas or the entire lung may be crepitant, giving the picture of an acute capillary bronchitis. X-ray examination of these cases at times gives no definite shadow, but we only see a slight haziness with peribronchial infiltration extending to the margin of the lung. Some of these cases have been examined post mortem with a surprising absence of the usual signs of a pneumonia. In some of the cases there is only a slight enlargement of the blood vessels, and when compressing the lungs small amount of fibrin can be squeezed out of the blood vessel. The microscopic section also shows the absence of the usual signs of inflammation giving the picture of an actelectasis caused by the engorged blood vessels. Most of the pneumonias which we see in children are of the bronchial type. It is rare indeed to see a typical lobar pneumonia with its classical symptoms. At times we are certain that a case is of the lobar type, yet on post mortem examination the typical findings of a lobar pneumonia are absent and we find the bronchial type. As a rule a lobar pneumonia has a good prognosis, but the prognosis in a bronchial pneumonia must be guarded. We have seen children enter the hospital apparently suffering from only a slight infection yet the next day become extremely toxic and soon die.

It is rather surprising the few cases of empyema which we have seen this winter. It is indeed rare for one of the pneumonias to develop fluid or pus in the chest cavity.

Some of the rarer complication are pyelitis, nephritis and septicemia. One case of pyemia came under our observation with numerous ab-

scesses over the body. In treating these cases we have as yet not found any specific therapy. Each case needs individual treatment. These cases must be isolated. Plenty of fluids must be given either by mouth, rectum, subcutaneous or intraperitoneal. It is extremely important to keep up the nutrition giving plenty of easily assimilated food high in caloric value. Drugs play a minor role. We usually give large doses of alkalies to prevent a possible acidosis. Caffeine, sodium-benzoate, digitalis, spiritus frumenti and camphor are used for stimulation. I have not found the use of large doses of camphor to be of any advantage to abort these cases. Complications must be treated as they arise. In middle ear disease where there is a redness of the drum with slight bulging I wish to warn against early incision of the drum membrane. We have not experienced frequent mastoid involvement where the drum was not incised.

In short the treatment is isolate, give plenty of fluids and treat symptoms.

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IRRITABLE BOWEL (COLITIS) ASSOCIATED WITH ACUTE RESPIRATORY TRACT INFECTIONS.

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There are many reports in the literature on the occurrence of inflammation in joints, nerves, heart, kidneys, etc., as complications of infections along the respiratory tract. However, that the intestinal tract may likewise be involved is not so commonly known.

Nothnagel[1] in his writings on the diseases of the intestines discussed the colicky abdominal pains or "rheumatic colic" associated with "colds," particularly in children. Poynton[2] remarked on the occurrence of epigastric distress in children with rheumatism. Stengel[3] suggested that in some cases "rheumatic colic" was due to painful conditions in the abdominal wall. Several more recent writers have reported on abdominal wall tenderness (neuritis) being mistaken for visceral tenderness. Brennemann[4] has reported on umbilical pain in children complicating "colds" which he believed due to inflamed mesenteric and retroperitoneal glands. Gale[5] has described a case of ulcerations and perforations of the small intestine which appeared secondary to infected teeth and furunculosis of the external auditory canal.

I should like to present for consideration some cases of acute inflammations in the nose, throat or ears which were complicated by pain and tenderness in the abdomen, apparently limited to the large intestine itself.

Irritable bowel, colitis, or neuralgia colia, is probably the most frequent painful abdominal condition found in general practice. It is often the condition too frequently and erroneously designated as indigestion, dyspepsia, gastritis, pyloro-spasm, etc.

The most frequent symptom of irritable bowel is a feeling of uncomfortable fullness or crampy distress in the abdomen, coming on a few minutes after eating. It is worse after a large meal than after a small meal and lasts generally from one-half to two hours, disappearing insidiously. This distress is more or less relieved by belching, vomiting, bowel movements, the passing of flatus, the drinking of warm fluids, by lying down or by the application of heat to the abdominal wall. The distress is generally increased by the taking of more food or the drinking of very cold fluids. This discomfort may be identically reproduced by distending the large intestine with two or three quarts of fluid taken by rectum. Tenderness is usually present over the colon at the site of the discomfort. Under x-ray examination, the bowel may appear normal in size and motility but in severe cases it is contracted and hyperactive, in portions at least. The bowel movements may be either normal in frequency, or constipation or diarrhea may be present.

The specific acute respiratory tract infections under consideration were tonsillitis, pharyngitis, rhinitis, sinusitis, and otitis media. In some of these cases other complications as neuritis and arthritis were likewise present.

In examining these cases an effort was made to rule out any pain or tenderness in the abdomen wall itself, also no case was considered where the abdominal discomfort was preceded by the use of cathartics or unusual or laxative foods. Cases with definite signs of gastro-enteritis were also omitted.

The following cases illustrate the condition under consideration:

Case 1. (John D.) This patient had a "cold" in the nose and tenderness over both frontal and right ethmoidal sinuses. Forty-eight hours after the onset of

this "cold" crampy pains in the epigastrum began. He was seen shortly thereafter. There was present tenderness over the sinuses, right side of scalp and right shoulder (neuritis) and definite tenderness over the transverse colon, and to a less extent, ascending colon. The x-ray examination of the bowel at this time revealed no gross pathology. This patient reported that he had an acute "cold" in nose and throat every few weeks and had similar attacks of abdominal cramps about every second "cold."

Case 2. (Emily K.). This patient was seen with an acute exacerbation of a chronic otitis media with a temperature of 99 degrees and W. B. C. 10,700. Had pain in ear, in left shoulder, hip, knee and, to less extent, in several other joints. She had marked tenderness over descending colon and to a less extent over the ascending colon. Bowels were regular in action and there was no history of use of cathartics or unusual or laxative foods. Patient stated that the abdominal discomfort had been present for about a month and flared up with each attack of earache. Several days later when again seen temperature was normal, ear was draining freely again and soreness of joints and abdomen had practically disappeared.

Case 3. (Oscar P.) After twenty-four hours of "cold" in nose patient began to have crampy pains in abdomen. The bowel tended to be constipated. On the third day of illness, when first seen, patient had definite pains and tenderness over transverse and descending colon. At this time rhinorrhea had ceased and temperature was normal. This patient gave a history of attacks of "colds" in nose about four or five times a year, and had abdominal pains every second or third attacks of these "colds."

Case 4. (Chas. D.) This patient had a temperature of 98.6 but complained of abdominal pains. Had taken no recent cathartics or unusual foods. He was found to have a red throat and definite tenderness over the descending colon. Had never had similar abdominal distress before.

Case 5. (George L.) This patient had slight soreness of throat for about 18 hours, when he developed slight nausea and soreness in left side of abdomen. Patient had noticed similar abdominal distress on former attacks of sore throats. On examination temperature was found normal, throat slightly injected and tenderness was present over the descending colon.

Case 6. (Frank C.) This patient was first seen with a temperature of 99.4 and complained of slight malaise. There was present a moderate inflammation of the tonsils and pharynx and tenderness over the splenic flexure of the colon. The throat and abdomen tenderness continued for several days and then subsided. About two months later patient was again seen with a moderate throat inflammation and a recurrence of the tenderness over the splenic flexure. This again subsided after several days with the inflammation in the throat.

Comment. The abdominal distress in the cases here reported was in most cases secondary in prominence to the respiratory tract inflammation; but in a few it appeared equally prominent as a symptom. In the majority the abdominal discomfort followed in onset that in the nose and throat. In some of the cases other "rheumatic" symptoms, as neuritis and arthritis, appeared with an abdominal distress.

The location of the pain and tenderness was most frequently over the descending colon; to less extent over the transverse portion of the large bowel. In a few cases the bowel was everywhere equally tender. In no case under observation was the umbilical soreness noted, as found by Brennemann in children. The duration of most of these cases was only a few days. However, several continued for five to six weeks.

It is important to draw attenton to the fact that I mentioned no case of "colds" complicated by pain most marked over the appendical region. There is no question that such cases do exist. No doubt, many cases of so-called appendicitis in which normal appendices are found are conditions of local irritable bowel. However, as so many cases of true appendicitis are associated with respiratory tract inflammations, and as these cases cannot be accurately differentiated, all patients with pain and tenderness in the right lower quadrant should be given the advantage of surgical treatment.

Whether the bowel soreness and tenderness is due to an inflammation of the mucosa or deeper in the bowel wall itself, has not been determined.

The presence of inflammation elsewhere in the body in joints and nerves suggested that an infection of the bowel wall by way of the blood stream was not impossible. The occurrence of bowel soreness with other conditions known to be due to focal infections suggests that focal infections may likewise play a role in the chronic bowel conditions that are often seen where no history of dysentery or use of cathartics or particularly irritating foods can be obtained.

Conclusions: Soreness along the colon is not infrequently a complication of acute respiratory tract infection. It is suggested that focal infections may be a causative factor in some case of chronic irritable bowel.

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STREPTOCOCCUS INFECTION OF THE UPPER RESPIRATORY TRACT*

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My attention was directed to the study of this subject by the following cases:

Case 1. In February, 1923, I was called to see a young lady of 13 who had been sick with a sore throat for two or three days. The family physician thought she was developing a peritonsillar abscess. I found the patient very restless and irritable and complaining a good deal of angina. Temperature was 102°. Examination of the throat disclosed a general diffuse redness of the posterior pharyngeal wall, pillars and tonsils, but no circumscribed swelling nor exudative spots were to be seen. The nasal chambers shared the same general erythema.

I told the family it was not a peritonsillar abscess, that it appeared more like a sore throat in one of the infectious diseases and that only with the aid of cultural studies and by watching the progress of the disease one could make a definite diagnosis. I did not hear from the case any further but later learned through friends that it had proved to be a streptococcus sore throat. She later developed edema of the glottis which had to be scarified, then suppurative otitis media and still later nephritis and uremia, and was given up by one of the most prominent internists of this city. Fortunately, she recovered after a prolonged period of illness.

Case 2. During September, 1923, I was called to make an otoscopic examination of a child 3 years of age, who had had a temperature of 102° for three days without any well established cause. Examination of the ears was negative, but the throat showed a general erythema with two or three small exudative specks on the tonsils. As in the previous case, this was my only visit to the patient but through the courtesy of the family physician I learned that the child had steadily grown worse and that a different consultant had been called every day for the following four or five days. The first diagnosis was follicular tonsillitis but later cultures proved it to be streptococcus infection. The patient developed endocarditis on the fifth day. On the sixth an ulcerative membrane appeared on the tonsils. One of the most prominent pediatricians of this city advised 20,000 units of diphtheria antitoxin, although the cultures were negative for the Klebs-Loeffler bacillus. Injection was followed by collapse and the child died on the following day, the eighth day of her illness.

The above cases prompted me to undertake the study of this subject in the hope that an early diagnosis might ward off the serious and even fatal complications. I found this, however, to be a very difficult task, the reason being that most of the cases do not become hospitalized; consequently no records are available. At the Children's Memorial Hospital of Chicago I could find no data at all on this subject. At the Sarah Morris I found that only three cases of streptococcus sore throat had been recorded for the years of 1922 and 1923.

A review of the literature proved it to be saturated with bacteriologic studies of the streptococcus, but very meager as to its clinical aspects. The English writers have reported epidemics of streptococcus sore throat from time to time. They called it septic sore throat, a very approriate name indeed. In this country hardly anything was written on the subject prior to 1912 when three distinct epidemics were reported. The first one, described by E. C. Winslow[1], occurred in Boston and vicinity during April and May, 1911. The second one, reported by Drs. Davis and Rosenow[2] and later by Capps and Miller[3], occurred in Chicago during December, 1911, and January, 1912, affecting over 10,000 people. The third one, described by L. P. Hamburger[4], broke out in Baltimore in April, 1912. Since then a few smaller epidemics have been recorded. One broke out in the surgical ward at U. S. Naval Hospital at Chelsea, Mass., in February, 1919. Another one, described by L. H. Smith[5], occurred in a nursery home in Portland Oregon, in 1921.

*Read before the Northwest Clinical Club, Chicago, Feb. 25, 1924.

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The only study of sporadic cases that I could find in the literature was that of Dr. I. H. Erb[6] of Toronto, Canada, who made a study of 350 cases at the Hospital for Sick Children of Toronto, covering a period of two and one-half years.

As gathered from the literature, one would be inclined to describe the disease as follows:

Definition: Streptococcic or septic sore throat is a virulent infection of the throat, nasopharynx and larynx caused by the streptococcus hemolyticus, beta type, and characterized by severe prostration, high temperature, diffuse redness of the throat, cervical and submaxillary gland enlargement, and is usually followed by serious complications.

Etiology. (a). *Indirect*: 1.—*Age*—No age is exempt. In the Baltimore epidemic children were more affected than adults, while in the Boston epidemic the reverse was true. Dr. Erb found the disease ranging between the ages of six weeks and 13 years. 2. *Sex*.—Females seem to be oftener affected than males. In the Boston epidemic the ratio was almost two to one. 3. *Season*.—More cases occur during the winter and early spring months, namely December to April. 4. *Carrier*.—The infection is most commonly carried through milk, as in the case of the Boston, Chicago and Baltimore epidemics, although other sources will undoubtedly be found.

(b) *Direct*.—The direct cause is the streptococcus hemolyticus, which was found in all cases reported in pure culture. It is best isolated on blood agar or Avery's oleate hemoglobin media. The determination of the type is somewhat difficult, for there are as many classifications as there are varieties of streptococcus. I believe, however, Dr. Gordon's[7] classification to be the simplest and the best. He bases his classification on three tests, namely, the ability to hemolyze blood and the ability to ferment the sugars, raffinose and mannite respectively. Accordingly he divides all streptococci into the following three main groups:

	Hemolysis	Raffinose	Mannite
1. S. Pyogenes or hemolyticus....	+	—	—
2. S. Salivarius or viridans.....	—	+	—
3. S. Fecalis or enterococcus....	—	—	+

Each of these groups are in turn subdivided into a number of strains, but most of them conform to the same serology.

Pathology. In the uncomplicated cases no gross or microscopic lesions will be found at necropsy in any other organ except the throat, which will show the general pathology of inflammation. This conforms to the findings of Dr. S. Bane-Jones[8], who reports an epidemic of streptococcus septicemia which broke out among 25 cats in the laboratory of Johns Hopkins Hsopital during February, 1921. Twenty-three of these animals died within fifteen days and at necropsy no pathology outside of the throat was found. In the complicated cases we will naturally find the pathology of the associated complications.

Symptoms and Course: The disease is characterized by a sudden onset with a few prodromals, such as chilliness, dizziness, backache and headache. This is shortly followed by a high temperature, 102 to 105°F., and a diffuse erythema of the posterior pharyngeal wall, tonsils and pillars. It appears more like a faucitis or the angina of scarlet fever for the first few days. Indeed, it has been frequently mistaken for scarlet fever. The larynx may become involved or otitis media may set in. Later exudative spots, a complete membrane or ulcerations make their appearance in the throat. Cervical and submaxillary glands are markedly enlarged. The patient is greatly prostrated and on the whole the symptoms are out of all proportion to the amount of local involvement. This feature of the disease has been noted by all observers. At first there may be leukopenia but later there is always a leukocysosis, as high as 40,000 or 50,000. The acute symptoms may subside in a few days, more often a recurrence with complications takes place, or the latter may set in immediately.

Complications. The most common complications are arthritis, suppurative otitis media, peritonsillar abscess, septicemia, peritonitis, nephritis, endocarditis and erysipelas, the most fatal ones being septicemia and peritonitis. In Erb's series out of 38 cases of septicemia only 2 recovered.

Diagnosis. The symptoms as described above, particularly the severity of the disease as compared to the small amount of local involvement, the glandular swelling and the persistent high temperature would arouse one's suspicion

5. Smith, L. H.: Amer. Jour. Dis. Child., 14, 171-177.
6. Erb, I. H.: Canadian Med. Assn. Jour., January, 1922, 13, 32.
7. Gordon, M. H.: Amer. Jour. State Med., 1922, xxx, 432-35.
8. Bane-Jones, S.: Jour. Infect. Dis., 1922, xxxi, 474-9.

that we are dealing with a case of streptococcus infection. A throat culture should be taken early; developed in blood agar media it will reveal streptococcus hemolyticus, probably beta type, in pure culture. This is very significant for, according to Dr. A. L. Bloomfield[9] of Johns Hopkins, streptococcus hemolyticus is never found in throats of healthy individuals. As to the blood culture, its findings are rather inconstant. In the Chicago epidemic the blood cultures were negative in most cases where glandular enlargement was pronounced. In Dr. Smith's series, referred to above, all cases that died gave positive culture. Of the two that recovered one was positive and the other negative. It would appear that the blood does not become positive until late in the disease when a general septicemia develops.

Prognosis. Prognosis is very grave. Erb finds the mortality to be 58.6 per cent in the complicated cases. Capps and Miller report 19 deaths in a series of 173 cases, making 11 per cent mortality. On the whole, it would seem to depend a good deal on the patient's resistance, most fatalities occurring among the aged and the weak. Dr. Hamburger found the size of the gland to be of prognostic value. He considers a large and persistent bubo of good omen.

Treatment. The treatment so far has been symptomatic. Every effort should be made to increase the patient's bodily resistance. General care, nutritious diet and early stimulation by iron, strychnine and other stimulants is indicated. Later digitalis, proctoclysis, and even blood transfusion may have to be resorted to. In Erb's series, referred to above, in which 17 cases were complicated by erysipelas 9 were exsanguinated and transfused. Of these 4 recovered. Of the remaining 8, which were not transfused, all died.

As regards the use of antistreptococcic serum, no extensive clinical observations have been made so far, the difficulty being that there are so many varieties of streptococci that a suitable serum has not as yet been produced in any laboratory in this country. Meyer and Joseph[10], two German scientists, claim they have been able to produce serums for all varieties which act not only against the organisms but also against their toxins. Gleason[11] recommends hourly injections of antistreptococcus serum combined with proctoclysis in cases of phlegmonous pharyngitis. N. C. Forsyth[12] treated 10 cases of quinsy with injections of antistreptococcus serum. He found that the pain was relieved in 6 to 12 hours and dysphagia a little later but before the abscess had ruptured. No incision was necessary, as the abscess opened spontaneously on the fourth day. The temperature approximated normal one or two days after the serum injection. Polyvalent serums were used in this series of cases.

In the epidemic of the Portland Nursery Home autogenous vaccine was used without any appreciable benefit. It would seem from the above that a suitable antistreptococcic serum should be given a thorough trial, for according to Dr. Gordon over 90 per cent of cases met with in hospital work are due to the streptococcus hemolyticus conforming to the same serology. He contends that in the vast majority of cases a monovalent streptococcic serum will suffice. Let us hope that such a serum will be produced in our laboratories in the near future.

CONCLUSIONS

1. Septic sore throat is of frequent occurrence. According to Erb it was the cause of death in 11 per cent of a series of 1,332 cases.
2. The disease is caused by the streptococcus hemolyticus and is usually carried through infected milk.
3. It is a very grave condition fraught with serious complications and of high mortality.
4. The severity of the disease is out of all proportion to the amount of local involvement, thus belying the seriousness of the condition.
5. Throat cultures should be taken to establish an early diagnosis.
6. Patient should be removed to hospital if at all possible.
7. Antistreptococci serum should be given a thorough trial in conjunction with other therapy.

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9. Bloomfield, A. L.: Johns Hopkins Hosp. Bull., 32, 33, 1921.
10. Meyer and Joseph: Medic. Klink, Berlin, 1923, xix, 103.

COMMON ORTHOPEDIC CONDITIONS*

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In almost every defect or deformity the general practitioner, the family physician, is the first person consulted and upon his advice the future welfare of such a patient depends.

It is my purpose in this paper to discuss briefly some of the more common orthopedic conditions about which the family physician is first called

*Read before North Side Branch, Chicago Medical Society, May 1, 1924.

11. Gleason: Sajou's Analytical Encyclopedia, vii, 427.
12. Forsyth, N. C.: Brit. Med. Jour., March 13, 1920, 361.

upon for advice and to allay the anxiety and fears of the parents.

The first of these is anterior poliomyelitis. At first this may seem to some, unimportant, except during epidemics. But when we stop to think that almost every day sporadic cases are springing up around us, many of which pass unrecognized and many are not even seen by a physician until they drift into a clinic, we are reminded of the constant presence of this disease.

In the acute stage, poliomyelitis calls for purely medical care and I shall leave the treatment to the medical man but, of course, he does not get much chance because all these cases are hospitalized as soon as the diagnosis is made.

However, after the patient is released from the hospital the family doctor is usually called upon for further treatment. The rehabilitation of the patient will depend largely upon his advice. The time is passing when the parents are contented with the statement, "Let him alone, he will out-grow it." The child very rarely regains complete muscular power. By far the greater number are left with more or less paralysis from which deformities develop and continually grow worse if untreated or improperly treated.

The individual who has had poliomyelitis should be kept at rest with the extremities in their proper position and well protected until all pain and tenderness has disappeared. Then very light massage and muscle training should be begun. Of these two muscle training is the more important. By muscle training we mean the reeducation and redevelopment of muscles which have been temporarily or partially paralyzed.

Whenever a muscle shows signs of returning power, the patient is encouraged to voluntarily contract that muscle a few times one day and a few more the next, being always sure to stop the exercises before the point of fatigue is reached. A few minutes overwork of a recently paralyzed may undo many hours of patient training.

In many instances a muscle may have regained some power but is yet unable to do its former work. This is often seen in the anterior tibial for example. With the patient sitting with the foot in the usual position the weak anterior tibial cannot lift the weight of the foot, but if the patient crosses the legs so that the long axis of the foot is parallel to the femur the foot can easily be dorsiflexed. Another way is for some one to support the foot while the muscle is voluntarily and actively contracted.

In this way almost all muscles that show a return of power can be redeveloped partially or completely. But it is often necessary to employ braces or some other apparatus to hold the extremity in its proper position until the muscles recover their power.

If this power does not return by the time two or two and one-half years have elapsed since the attack, braces must be continued or corrective surgery resorted to.

Each individual case must be studied and the surgical procedure carefully planned before the time of operation. It requires just as much if not more skill to plan an operation on some of these cases as it does to do the actual surgery.

It is beyond the purpose of this paper to discuss the surgery of poliomyelitis in detail but suffice it to say that certain types of operations have become standard procedures such as tenoplasty and stabilizing operations.

Whenever possible a tendon transplantation is the operation of choice. Transplantation of the long head of the biceps and the semitendinosus forward to the patella for paralysis of the quadriceps gives excellent results in the majority of cases. For drop foot transplantation of the toe extensors to the dorsum of the foot, together with an arthrodesis of all the small joints of the foot to prevent lateral deviation gives very satisfying results.

Of the stabilizing operations, Whitman's operation, astragalectomy, is the most generally useful operation for the flail ankle.

Second only in frequency and importance to poliomyelitis is cerebral spastic paralysis. There are several types of spastic paralysis that cannot be gone into in this paper but I shall limit the discussion to the type caused by injury at birth due to prolonged labor or to the pressure of instruments causing a cortical hemorrhage above or below the dura at the vertex of the skull.

This may be a hemiplegia, diplegia or quadriplegia, mild or severe with mild or severe mental deficiency, depending upon the location and extent of the hemorrhage. The cases of hemiplegia as a rule have the least mental deficiency.

Early diagnosis and operation is essential to recovery but after the clot becomes organized decompression is useless.

The cases we see are those of long standing

and we can only benefit them to some extent by muscle and tendon lengthening. This only aids them in walking but, of course, does not add to their mentality.

Another birth injury of quite common occurrence is obstetrical paralysis. It affects the upper arm and may be the result of difficult or protracted labor. It may result from direct pressure on the brachial plexus but it is most often caused by traction on the head or body or by twists of the neck during labor. The nerve injury may be either a hemorrhage into the nerve sheath which causes pressure from scar formation or a complete tear of the nerve roots.

The type most frequently seen is the unilateral upper arm type of Erb in which the power of abduction and external rotation at the shoulder, of flexion and supination of the forearm is lost and the arm hangs in inward rotation with pronated forearm.

During the first few weeks after birth the shoulder of the affected arm is often swollen and painful on motion. Rest is indicated in such cases. After the swelling and tenderness have disappeared each of the joints affected should be moved to the extent of the normal range of motion several times a day.

Just as soon as the patient can wear it a splint should be applied. This is made of wire covered with canvas. The wire is mounted to fit the lateral half of the chest on the affected side then extends outward to hold the upper arm at right angles to the body and the forearm flexed at a right angle and parallel to the body. Thus the affected arm is held in abduction, outward rotation and the forearm supinated. The whole process is simply one of untwisting the arm and holding it until the affected muscles are thoroughly stretched. In some of the neglected cases, however, it may be necessary to divide some of the muscles before the arm can be brought into the proper position.

Congenital equinovarus is quite a frequent deformity and it yields readily to the proper treatment when begun at the proper time. We frequently see cases where the parents have been told to wait until the child begins to walk or to wait until it is a year or two old before having anything done.

This is improper advice. The time to start correcting a club foot is the first time you see the foot or at any rate usually by the time the child is two weeks old. Gentle stretching and untwisting done by the parents or nurse is of great benefit to the foot. Plaster-of-Paris casts applied while the foot is held in a corrected position and changed about every two weeks until the varus is corrected is next in order. It may be that by the time the lateral deformity is corrected the Achilles tendon will also have become stretched. However, if the Achilles tendon has not stretched or shows no tendency to stretch then a tenotomy must be done to allow the foot to be dorsiflexed beyond a right angle. When this is done it is usually noticed that the toes are tightly flexed. If so the flexor tendons must be tenotomized at the base of the toes. This is just as important as any other step in the operation. If these flexors are not cut they make walking more difficult and also tend to cause relapse by pulling the foot into the inverted position. The posterior tibial which is a direct inverter of the foot frequently needs to be divided also.

After thorough stretching and tenotomies the foot is over-corrected and put in plaster-of-Paris, not put in plaster and then over-corrected. The casts are changed as the occasion demands until the foot shows no tendency to relapse.

In small infants it is wise to flex the leg at right angles to the thigh and include the thigh in the plaster. This gives a good grip on the foot and prevents the cast from being kicked off or the foot from pulling up in the cast.

It is always wise to apply a Taylor club foot brace to be worn many months after the cast is removed.

Old neglected club feet of older children and adults usually require extensive bone operations such as cuneiform osteotomy in addition to tenotomies. Astraglectomy should never be performed in a congenital club foot of the equinovarus type if it can possibly be avoided because removal of the astragalus removes the chief bony support of the inner side of the foot and tends to favor, rather than prevent, a varus deformity.

The cripple we have had and always will have among us but we are safe in saying that some diseases that result in deformities are slowly but surely decreasing. In the various orthopedic clinics there has been a noticeable decrease in the number of patients with bone and joint tuberculosis.

Tuberculosis of the bone and joints is the most difficult and the most time consuming of all the deforming diseases we are called upon to treat. The early and proper diagnosis of this disease is of the utmost importance to the patient as is also the proper treatment.

In this connection I wish to call attention to three cases that have come under our observation during the past few years.

One of these was a girl about six years of age who was brought to the clinic with a hip flexed at forty-five degrees. She had been under treatment for several months and was wearing a very inefficient brace. She had spent six weeks in a hospital in bed with traction, then had worn a cast for several weeks, then last of all the brace. But during all this time all treatment had been confined to the well leg. The mistake was made because in the early stage there was apparent lengthening on the diseased side and the leg that looked short was the one treated or pulled.

Some time later another girl about nine or ten years old came to the clinic. She gave a history of repeated attacks of appendicitis and had finally been operated upon. Through this incision a large amount of tuberculous pus was draining. The diagnosis of appendicitis had been made from the pain which was referred to the abdomen from a low Potts disease and from the palpable psoas abscess. She had a kyphos that anyone could feel and see but it had not been noticed until she came to our clinic.

Quite recently another ten-year-old girl was sent to the hospital by the family doctor. She came late in the evening and the parents stated she had appendicitis. She gave a history of recurrent attacks of pain over the appendix region and seemed tender over the appendix. The intern made a probable diagnosis of appendicitis and pyelitis and called the attending surgeon. He examined her and said she could wait until morning. In the morning the intern on the ward made a careful examination and discovered a well marked kyphosis. The x-ray showed the lesion with an abscess around it.

These three cases are cited only as a reminder that things are not always what they seem and we must always be on our guard.

The treatment of bone and joint tuberculosis in children should always be conservative. In former years when treatment was neglected or was less efficient than at the present time nature cured hip disease with a shortened and distorted leg.

The object of treatment is to relieve the pain; to relieve the muscle spasm that induces distortion of the leg; to correct and to prevent deformity.

Practically every case of hip tuberculosis we see has some flexion deformity, muscle spasm and night cries.

These children are put on a Bradford frame with traction. A Buck's extension is applied with the adhesive strips going high up on the thigh. The pull must be made along the angle of deformity and the weight must be sufficient to relieve the muscle spasm and prevent the night cries. As the muscle spasm is relieved the angle at which traction is being made can gradually be lowered until the leg is down parallel to the well one. When this is accomplished, if there are no complications, a long plaster-of-paris spica is applied and the child allowed up on crutches, or a traction hip splint can be worn.

The common complication of hip disease is abscess formation. When an abscess forms the temptation to incise and drain it is great. But these abscesses should not be incised because of the danger of secondary infection which always follows.

Many of the tuberculous abscesses absorb if the patient is kept quiet long enough. Others have to be aspirated from time to time and finally absorb. Still others break through and become secondarily infected in spite of all we can do.

The principles of treatment of tuberculosis of the spine are the same as of the hip joint.

While we are conservative in our treatment of joint tuberculosis in children we are more radical with that of adults. When an adult develops a joint tuberculosis the sooner that joint is surgically ankylosed and the sooner the joint is well and the patient can resume his usual occupation.

There has also been a marked decrease in rhachitic deformities, deformities due to improper food, lack of sunlight and a place to play.

But we now and then have to prescribe braces for some cases of bow-legs or knock-knees and we see others who are past being benefited by braces and need operative correction.

Although we cannot make the cripples over into physically perfect individuals the majority of them can be made self-supporting at least and

thus become an asset instead of a liability to their community.

PHENOLSULPHONEPHTHALEIN TEST

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The use of the Rowntree and Geraghty modified Hellige Colorimeter for estimating the quantity of phenolsulphonephthalein excreted, when applying the Rowntree and Geraghty's renal functional test, presents a certain difficulty, in comparing the specimen with a standard solution contained in the wedge-shaped cell, because the color of the urine differs considerably from the color of the water which is used for preparing the standard solution.

The Dunning Colorimeter, which consists of thirteen sealed ampules containing standard color solutions, allows a more exact comparison of the specimen and standard solution, because the alkaline water used for making the solution is tinted with yellow to compensate for the color of the urine specimen. But the specimens of urine of different patients vary considerably in color; this makes an exact comparison of the urinary specimen with the standard solution difficult at times or impossible. To meet this difficulty, the following modification of the method is suggested based upon color comparator block, such as has been described by Walpole[2] and others.

The comparison box contains six holes, arranged in two rows. The sealed ampules contain standard color solutions made by dissolving phenolsulphonephthalein in alkaline water which has not been tinted with yellow. The ampules are placed in the comparison box in the following way:

The ampule containing the prepared specimen—in the front center hole of the comparison box; the sealed standard ampules on either side of it; an ampule containing pure water—in the back center hole; two ampules containing unprepared urine specimen of the same patient—on either side of it.

By arranging the ampules in the above mentioned manner, we have in each sagittal row urine, water and phenolsulphonephthalein, thus eliminating the difference in the color between water and urine and making the comparison possible with highly colored or cloudy urines.

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1. Walpole, G. S., Bio-Chem. J. Liverp. 1911, V, 207.
2. Sholl and King. John Hopkins Hosp. Bull. 1920, Vol XXXI, No. 351, p. 158.

THE PHOSPHATIC INDEX

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A human being consists of a body and a soul; the former is made up of fluid, bone and flesh divided into cells, every one of which can be seen and examined either macro or microscopically.

The soul is a biologic force which houses the mind, reason, temperament, etc.; like air, electricity and gas, it is always present, but cannot be seen. The location of the soul is indefinite, but it may be inferred it occupies a region adjacent to the seat of all life—the brain; in fact, as air surrounds the earth, the soul surrounds the brain.

Scientists tell us that the human body completely changes every seven years, that at the end of that time, not one single cell of the original remains. If this is so, there must be a constant destruction, and if life is to be maintained, there must be an equal, or practically so, reconstruction.

We know that the human body is composed entirely of chemical compounds; that these are received through the stomach in the form of food and fluids; that each division has a specific nutrition that is used as a force, and when it has performed its function as a nutriment, there is a residue which remains and is thrown off as an end product.

Thus we have iron supplied to the blood cells; calcium to the bones; protein to the muscles and phosphorus, lecithin and nuclein to all cells, especially so the nerve cells, where they act as a nutrition of food.

The residue of end systemic destruction makes its exit from the body through four channels: the skin, lungs, bowels and kidneys, all of which can be examined chemically or microscopically, detecting at once any interference with normal elimination.

Focusing attention on an emunctory—the kidney, and choosing one of the most important excretions therefrom, the phosphates, and which are the end products of phosphorus, lecithin and

nuclein, and the following information is gleaned:

There are two varieties of phosphates, the earthy and the alkaline. The earthy or magnesium and calcium, phosphate may appear is freshly passed urine, or upon boiling: they are not seen as crystals, but resemble microscopical sawdust, and readily dissolve on the addition of an acid. These have practically no clinical significance and may be dropped from further consideration. The alkaline phosphates, sodium and potassium phosphate, appear as crystals, but only after precipitation with an alkaline solution. These represent the end products, in other words, the residue of nerve cell nutrition; the debris, so to speak.

It has been stated, and there is no question that it may be true: the alkaline phosphates, to an extent, may be eliminated by the bowels, but the greatest amount is passed by way of the kidneys, in the urine.

The elimination of the alkaline phosphates varies during the day. In the morning, up to about ten o'clock, they are at their lowest ebb; they rise during the day, until evening when they are the highest. Certain foods which are rich in phosphorus will also, to some extent, increase them.

Books briefly state that the rise or fall in the alkaline phosphates are influenced by the nervous system. Could more positive proof be forthcoming? As already stated, they are lowest in the morning, because the mind and brain have been at rest, but they commence to rise during the day, and are at the apex in the evening.

The brain, through ramification, supplies the whole body with motion, sensation and energy. But as a source of supply, it is called upon to go one step further, it also furnishes energy for that biologic force, the mind.

Like the heart or lungs, the mind is in constant action day and night, and the call for energy for this purpose, and especially in a good majority of the people of today, is far in excess to that necessary for the normal calls for the already mentioned motion and sensation. As we find it is outside environments: commercial plants, the greater the call for power, the greater the need for an increase in fuel, and in turn, the greater the end products or waste.

It has been stated that nutrition is supplied the nerve cells from the food we eat. It may be further stated that there is not only a sufficient amount supplied for the normal daily calls for action, but that nature has deemed it wise to create an excess for times of emergency; this may be called a reserve. This is well exemplified by the statement of Prof. Shaw, in his work on Nervous Diseases, when speaking of neurasthenia. He says: "This unstable state of the nervous system depends evidently upon some defect in the power of the neurones to assimilate and store up nutrition and force in sufficient quantities and with sufficient rapidity to carry on fully and easily the work of life."

Although the writer will admit it is a very bold assertion, it will be found true, nevertheless, if the mind could be eliminated as a factor in the use of nerve force, fully ninety per cent. of the conditions known as neurosis would become a thing of the past.

The truth of such a statement should be very clear. Every thought arises in the mind; thoughts demand energy, the more intensifying the thoughts, the greater the calls for energy.

The method of ascertaining the phosphatic index is very simple, in fact, far too much so to make the psychological impression on the mind of the physician of today, that it should.

Use the second or third sample of urine passed in the morning, preferably between ten and eleven o'clock. Fill the Phosphatometer (the Phosphatometer can be used to take the specific gravity) with urine to U, add solutions* to S, shake thoroughly and set aside for ten minutes. If nutrition in the nerve cells is normal, or approximately so, and is being used in the same manner, the mixture will turn milky at once, and in amount as to the reserve present.

When the precipitate falls below NP, or does not fall at all, and is light and fluffy, it indicates that the reserve is depleted to an extent as registered on the Phosphatometer. In this condition the crystals will practically always show a want of nutrition.

This condition is analogous to a deficiency of hemoglobin with a diminished red cell count. The symptoms may vary just as widely as those in anemia; that is, from a mild primary condition to the pernicious variety.

*Mag. sulphate, ammonium chloride, water of ammonia 10% (common kitchen variety) of each one ounce. Water 8 ounces, mix and let stand a couple of days or so before using. This solution can be prepared by anyone at a small expense; four ounces with printed formula, and cut of crystals with full directions accompany each Phosphatometer as sent out by the Richardson Drug Co., Buffalo, N. Y.

Like the suckling baby that cries when hungry, hunger of the nerve cells is manifest by pain, especially of a neuralgic or neuritic nature. But nerve cell hunger goes one step further.

Resistance in every tissue of the human being is furnished from the brain, through the nervous system; a low state of nutrition means a low resisting power, a most grievous condition to be encountered in the treatment and care of inflammatory or any other condition where repair is necessary.

As an illustration of the above, briefly the following cases may be cited:

Mrs. D., my mother, aged 88 years, pneumonia, under treatment by Dr. Colton. It was very evident, about the third or fourth day, that she could not continue much longer, as the case was going. I personally made an index, which was very low, and suggested that she be put upon a mixture of phosphorus, nux vomica and cannabis indica to increase resisting power, in connection with other measures. This was done at once, and after three or four doses of medicine she volunteered the information, "I feel better." This was evident by a fall in temperature and a clearing up of the lung condition; she entirely recovered and lived for several years.

Dr. E. A. Smith removed a very large fatty tumor from the shoulder of a patient aged 35 years. Healing was by granulation. It progressed favorably for ten days to two weeks, when no matter what sort of dressing was used, there seemed to be no advancement. At the suggestion of the house surgeon, an index was taken and found very low. The same mixture in half teaspoonful doses was ordered half an hour after meals in milk. In three or four days it was apparent that granulation had resumed; in two weeks the wound was closed and at the end of a month the patient had gained sixteen pounds in weight.

Dr. W. (a former president of the N. Y. Medical Society), had a very severe left brachial neuritis of over six weeks' standing; no form of treatment had given relief. An index was taken registered N. P. and in the absence of any excess of uric acid, an opinion was given that the nervous system was not at fault, and to consult a surgeon as the trouble was probably due to pressure on the nerve.

Ignoring my advice, and at the suggestion of another physician, who had relieved several cases of neuritis with phosphorus (there certainly was a minus index), he took the heretofore mentioned combination of phosphorus, nux, and can. ind. No more result than from the former treatment. He consulted a surgeon who found pressure and relieving it, he was free from pain in a few hours.

(Think of the suffering that could have been avoided had an index been taken at the outset of the trouble.)

Headache is the most common symptom we find in anemia; pain is always present in a deficiency of nerve cell nutrition or neuroinidia.

Pain is a reflex condition. The center of pain is located in the brain, the sensation being referred to any certain spot by the cause being located at that point. It may appear at a point where there is no apparent injury or irritation, but questioning will always bring forth the information that at some time there has been an injury, or solution of continuity, an old fracture, dislocation, sprain or other injury.

Painful conditions may be divided into two varieties, the ones where a cause is evident by sight, feeling, x-ray or history; these may be considered as organic, they are located at a specific spot and may be accompanied by fever, etc. On the other hand, pain may be indefinitely located, and change in character is very common. There is no definite cause observable, and it is this very thing that has led to local foci of infection, a condition that we now know has been sadly overworked. This condition of pain can be termed as functional, and although there is a cause, it is not of a true, pathological nature; it is the same as a murmur, due to anemia.

It must be admitted nerves cannot speak, but they have a word for irritation or hunger; it is pain.

The following briefly reported cases must show the value of ascertaining the state of nerve cell nutrition in all conditions of pain of an indefinite nature, or where well known and appropriate remedies do not quickly relieve the condition:

Miss K., in bed for nine weeks with rheumatism (the diagnosis was correct; the cardinal symptoms of that disease disappearing under treatment for that condition).

But pain of an indefinite character continued to an extent that it was impossible for her to be about for any length of time. A sample of urine being sent to me, an index, seventy-five per cent. minus was found, crystals B, showing nerve cell impoverishment, otherwise it was normal.

A prescription: FL. Ex. Valerian, one ounce, Comp. Phos. tonic, two ounces, was prescribed, one-half teaspoonful in milk half an hour after meals. Pain decidedly lessened after the fourth or fifth dose. Strength returned, she was able to get about on the fourth or fifth day with no pain and strength returning fast.

Mrs. C. patient of Dr. Bennett's. Brachial neuritis of over two years' standing, no relief from treatment. An index in this case showed 80 per cent. minus, and Comp. Phos. Mixture ordered at once. Three doses

entirely stopped the pain; she gained in weight and strength also; was entirely well two years afterwards.

Hundreds of cases of neuritis, neuralgia and like conditions could be reported; suffice it to say, of the above conditions about eighty to ninety per cent. will be found due to a want of nutrition, as will be shown by a minus index.

When the precipitate remains in a practically solid condition above NP, it indicates irritability or hypersensibility of the neurones; the normal daily amount of energy received is not only being used, but the reserve is being drawn upon. Such a condition is generally characterized by pain, great irritability; in the hysterically inclined, symptoms and actions are markedly intensified.

If such a condition is allowed to go unchecked, sooner or later the reserve becomes depleted, and a condition of neurasthenia or other more serious conditions present themselves.

Mrs. H., at Toronto, Ont., taken with sudden and severe pain involving the whole body; fingers, also elbow joints swollen markedly. Remained in bed three weeks, being treated for rheumatism, but no apparent relief. Brought to Buffalo, the writer was asked to see her. The case looked a perfect picture of rheumatism, and diet and appropriate remedies for that condition were ordered. Day followed day without any relief; morphin was necessary for the pain. At the end of a week an index was taken being found 150 per cent. plus. Sodium bromide grs. 15, in elixir valerianate of ammonia, drachm one, was ordered every three or four hours. It was necessary to increase medicine to once an hour; at the end of a couple of days she was practically free from pain. At the end of a week she was doing nicely, but very weak. Another index at this time showed 75 per cent. minus and a Phosphorus Mixture was ordered; she gained rapidly and was soon in perfect health.

My own personal case. Pain in neck, shoulder and arm. (1918) Diagnosed as influenza by attending physician and sodium salicylate in Tr. cimicifuga ordered. Water would have done me as much good; for four or five days the pain was intense. On the sixth day I had an index taken and found 100 per cent. plus. Obtained the same formula: bromide and valerian. Great relief two hours after the second dose, entirely free from pain in eight or ten hours. Next time I will take my index and avoid suffering.

Summing up the whole affair it might be suggested that fully eighty per cent. of human ailments are functional; they are the ones that bother the physician. Local foci of infection dismally failed as furnishing the cause; when in doubt look to the seat of functional troubles, the brain cells.

437 Franklin Street.

Society Proceedings

ADAMS COUNTY

Meeting of September 8, 1924

This was a dinner meeting of the Adams County Medical Society, held at the Quincy Chamber of Commerce. Dr. Warren Pearce, the President, was in the chair and there was a total attendance of 49.

After the dinner was completed Dr. Carl E. Black of Jacksonville was called upon to address the Society on the subject, "What the Jacksonville Clinical Association Has Accomplished." This was an excellent talk outlining the benefits of a clinical association. Following this Dr. Herman H. Cole of Springfield talked upon, "What the Sangamon County Clinical Association Has Accomplished." This, too, was an excellent plea for the establishing of clinical associations. The discussion was opened by Drs. J. E. Miller and Walter Stevenson and continued by Dr. Deal of Springfield, Dr. Norris of Jacksonville, and Drs. Swanberg, Center, and Williams, being closed by Drs. Black and Cole. The President thanked the members from Springfield and Jacksonville for coming to Quincy to tell us what their counties have accomplished by means of the clinical associations. Following this the business session was conducted.

The minutes for the July and August meetings were read and approved. Dr. A. H. Bitter, Chairman of the Entertainment Committee, reported that there was no deficit from the picnic held last month. Dr. Koch, Chairman of the Committee on Parking Automobiles in the Down-Town District, reported that he had attended a recent council meeting and stated that the council said they would consider his plea for special privileges for doctors in motoring but would not approve of any special parking privileges. Following this there was a long discussion about the advisability of trying to secure special privileges for parking of physicians' cars in the down-town district of Quincy. Dr. Nickerson made a motion that the committee's report be approved and continued. Seconded and carried. Dr. Swanberg tendered his resignation as chairman of the Arrangement Committee for the 1925 State Medical Society Convention in Quincy, stating for his reasons poor health and a desire to see more of our members take an active interest in the doings of the Society and be willing to do work. He felt that as Secretary of the Society and Editor of the *Bulletin* he was doing his share and did not want the membership to get the idea that he was endeavoring to seek all the offices of the Society and do all the work. It was moved by Dr. Nickerson that Dr. Swanberg's resignation be accepted with regret. Seconded and carried. Dr. Ericson made a motion that Dr. Pearce be made Chairman of the Local Arangement Committee. Seconded and carried. Dr. Beirne announced that the President of the State Society and the Director of the State Publicity Campaign would be available to come to Quincy in November if the Society wished them. Bills to the amount of $11.06 for flowers were presented for approval. Dr. Nickerson made a motion that the bills be ordered paid and a voucher drawn

for them. Seconded and carried. Dr. Knox read a resolution the summary of which was to the effect that the Adams County Medical Society go on record as being opposed to having any physician as director of the Adams County Tuberculosis Sanitarium other than one who specializes in tuberculosis, who devotes his entire time to the Sanitarium and who does not engage in general practice but limits his practice to the treatment of this disease, the resolution being signed by Drs. Koch, Knox and A. H. Bitter. Dr. Knox made a motion that the resolution be adopted. Seconded by Dr. Koch. Dr. Irwin explained what he had endeavored to accomplish at the Adams County Tuberculosis Sanitarium since he had been made director nearly 10 months ago, and stated he was willing to resign as director any time the Board of Directors of the Sanitarium wished him to. Dr. Center spoke in protest of the resolution and was followed by Dr. Beirne who moved that the resolution be laid on the table, this motion being seconded by Dr. Montgomery. After further discussions explaining the resolution by Drs. Knox and Koch the motion to table the resolution was carried. Further discussions on the work of the Sanitarium followed. Dr. Stevenson made a motion that the Adams County Medical Society sponsor a clinical association and that a committee of five be appointed to investigate the desirability of doing this and to report back at the next meeting. Seconded and carried The President appointed Drs. Cohen, Steiner, Miller, McReynolds and Jurgens to serve on the committee.

A motion for adjournment was then in order and the meeting adjourned about 11:25 p. m.

HAROLD SWANBERG, M. D., Secretary.

COOK COUNTY

THE CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

The regular monthly meeting of the Chicago Laryngological and Otological Society was held at the Hotel Sherman, Monday, April 2, 1923, at 8:30 P. M.

The President, Dr. Chas. H. Long, in the Chair.

PRESENTATION OF CASES:

DR. C. H. LONG presented a patient who had been operated on for nasal obstruction, a condition which apparently had affected his mental state. The patient insisted that there was a cartilage which obstructed his left naris and that he was unable to get free passage of air through his nose.

DR. JOHN A. CAVANAUGH reported a case of foreign body in the esophagus in which a diagnosis of carcinoma of the esophagus had been made, and presented skiagraphs showing the hour-glass appearance and obstruction of the esophagus. The history was that the patient awoke one morning and had difficulty in swallowing with regurgitation of food. He had no knowledge of having swallowed a foreign body but had been on a "spree" for a few days and missed a small artificial denture from the front of the mouth, which he thought had been lost. Röntgen examination revealed the cause of the obstruction and the plate was removed without much difficulty. The patient made an uneventful recovery.

DISCUSSION

DR. GEORGE W. BOOT thought it was unusual for a patient to swallow a plate without knowing it and believed it was criminal for dentists to make such small artificial removable dentures. They should be large enough so that they could not slip into the esophagus.

DR. EDWIN MCGINNIS recalled a case he had seen where the patient had swallowed a plate containing three teeth. The patient developed hoarseness and later difficulty in breathing but had no knowledge of having swallowed a foreign body. Upon examination the physician saw the upper edge of the denture and removed it with forceps.

SCIENTIFIC PROGRAM:

DR. GEORGE W. BOOT read a paper entitled: "Tumor of the Carotid Gland with Stokes-Adams Syndrome."

(Abstract)

The patient was a mulatto whose symptoms had been present for six months. They began with a choking spell and loss of consciousness for about a minute. These strangling or choking spells recurred from one to three times daily until he entered the hospital. At this time examination of the larynx was difficult on account of the convulsive action of the muscles of the throat and neck. It was found that he had paralysis of the left abductors and that the left vocal cord was fixed in the median position. He had a small lump in the neck which was thought to be an enlarged lymphatic gland. Pressure on this lump was painul and immediately brought on one of the choking spells. In these spells his pulse became slow. If the pressure were continued long enough he became pulseless at the wrist and the heart sounds heard with the stethoscope disappeared and if the pressure were still longer continued he went into a general convulsion. The condition was a typical Stokes-Adams syndrome of vagus inhibition due to pressure of the tumor on the pneumogastric.

On attempting to remove the tumor it was found to be intimately connected with the common, internal and external carotids and internal jugular vein, all of which had to be ligated before the tumor could be removed. The patient lived about a week after the operation and succumbed to pulmonary tuberculosis which was much aggravated by the operation.

He had had no fever or night sweats but had coughed a good deal before the operation. Examination of the chest was much obscured by the noises incident to the vocal cord paralysis and the constant convulsive action whenever any examination was attempted.

Benign tumors of the carotid gland are simple hyperplasias, adenomata or angiomata. Malignant tumors have been diagnosed with difficulty, sometimes being called sarcoma, carcinoma, endothelioma, perithelioma and so on. About seventy cases of carotid tumor have been reported, the first in 1891. They affect the sexes about equally. Only one case had bilateral tumors. They are more common after the age of 40. Often they are present for years, in one case for forty years, before they begin to enlarge rapidly and assume malignancy.

Operation should be done before they involve the

carotids. The mortality of operation to date is about 30 to 35 per cent. The cases that recover are apt to have recurrences or to have permanent paralysis of the recurrent, the facial, the hypoglossal or to have hemiplegia or aphasia.

The specimen removed should be fixed with Mueller's or Zenker's fluids for the cells belong to the chromaffin series and do not stain at all well if fixed in formalin. However, specimens preserved in formalin may have their staining properties restored if they are run through chronic solutions before straining.

DISCUSSION

Dr. Otto Stein thought these tumors were probably not as common as they might seem and that they were usually diagnosed late, frequently on the operating table.

He recalled a case which he had considered a tumor of the neck of indefinite origin. Upon attempting to operate they found a dense, vascular and adherent mass and the disturbance caused by manipulation indicated that the tumor had something to do with the pneumogastric. The effects were so pronounced that operation had to be discontinued.

Dr. Stein said he would hesitate to operate in such a case for the mortality is enormous and the possibility of a patient living for a long time with such a gland is more favorable than that of recovery following operation. Most cases are of malignant type when seen. The location of the mass, at the bifurcation of the external and internal carotid artery so closely associated with the nerves, the hypoglossal and superior cervical plexus lying on the anterior surface, makes dissection very difficult without producing some disturbance of the nerves. In the early stages this difficulty would not be so great but the cases are seldom seen early and the intimate association with the carotid made them practically hopeless operations. The ability to diagnose this condition and differentiate it from many other things was of importance for many things lead to suspicion of the carotid gland. He was of the opinion that such growths should be left alone.

Dr. Joseph C. Beck asked Dr. Boot to explain the connection between the epilepsy and the growth. He thought perhaps the relation of the sympathetic ganglion to the tumor was of some importance in this connection, along the line of the work of Jenesco regarding the ligation of the carotid to cure epilepsy. He believed he might be as lethargic as Dr. Stein in leaving such a growth alone.

He also asked Dr. Boot if he did not find in the literature that the carotid gland was related to the polyglandular system. In his opinion, radiotherapy might have been given a trial in this case.

Dr. Boot (closing) said that another physician saw the patient and used radiotherapy before he took charge of the case. He thought Dr. Stein's advice to leave such cases alone was very good. The time to remove these growths was before the tumor got large enough to involve the carotid, but that was before he sought the advice of the physician—as a rule.

He was glad to hear Dr. Beck mention the work of Jenesco but thought it had been entirely to the discredit of the profession and believed that Jenesco himself had changed his opinion.

Dr. Boot believed the cause of the epilepsy in his case was anemia of the brain from the compression of the growth, that the sympathetic ganglion had nothing to do with it but that it was a Stokes-Adams syndrome. They could neither feel the pulse nor hear the heart sounds with the stethoscope before the convulsion.

Dr. James E. Lebensohn presented his inaugural thesis entitled: "Congenital Atresia of the Posterior Nares."

(Abstract)

Congenital occlusion of the choanae is rare. The total number of *reported* cases is now 170. However, correct diagnosis may often be a matter of fundamental importance. Many of these cases are unrecognized at birth, and when speedily dying as a result of the obstruction to respiration are placed under the general class of asphyxia neonatorum. Among children, because of the nasal obstruction, many are diagnosed "adenoids," and often subjected to repeated adenoidectomy.

Pathology: Congenital choanal atresia has been reported three times as often on both sides as on one side alone, and the obstruction when present is usually complete. In 90 per cent. of the cases the occlusion has been of the osseous type. The obstructing plate of bone is vertically placed, has a concave pharyngeal aspect, and is situated within the nasal chamber, the posterior edge of the vomer extending about a millimeter beyond it.

The central portion of the occlusion is thinner than the periphery and may sometimes be composed of membrane only. Post-nasal examination then shows a more or less marked dimpling at this point—occasionally a perforation. This opening when present is functionally of little value, giving the patient neither the ability to blow the nose nor respire.

Choanal Occlusion in the Newborn: Bilateral occlusion of the choanae in the newborn constitutes a definite emergency, and the life of the infant may depend upon making the diagnosis. The distinctive symptom is:

"Cyclic dyspnea." The child struggles for air, the face becomes slightly cyanosed, the child cries, and the mouth breathing instituted relieves the distress. The child rests—and the cycle of respiratory difficulty recurs. So great is the dyspnea as to prevent the infant from taking either the breast or the bottle. Since mouth breathing is an acquired habit, the newborn child thus affected suffocates unless special measures are taken. Another characteristic pathognomonic of this affection is the thick, gelatinous, clear mucus that fills the nasal cavities. To verify the diagnosis: (1) Syringe the cavities. The fluid does not enter the pharnyx but returns in excess at the anterior nares. (2) Pass a probe. The resistance of the obstructing osseous plate is felt.

In the management of this emergency, the immediate object is to secure and maintain mouth breathing. By pressing the lower lip down the dyspnea is relieved. The lips are thus kept apart day and night until the end of the second week, by which time the child has probably learned to breathe through its mouth. During this period nutrition is maintained by dropper feeding. The child shortly learns to breathe through its mouth and suck at the bottle alternately.

After the ninth month the nasopharynx is sufficiently well developed to permit of the finger manipulation necessary to operation. To prevent possible alterations in the facial skeleton, the operation should be undertaken at this period or soon thereafter.

Choanal Occlusion in Later Years: On the side of the choanal closure the following constant phenomena are observed:

1. Nasal obstruction of the completest type. Neither

respiration nor expulsion of mucus is possible. In crying the tears flow out of the anterior nares.

2. Anosmia recurs because of absence of an air current. After removal of the obstruction the sense of smell is sometimes partially regained.

3. Accumulation of a distinctive type of mucus—albuminous, extraordinarily tenacious, and of a peculiar bluish color. The patient, by pressure against the alae, may be able to remove the viscid secretion.

4. Atrophy of the turbinals makes the nasal cavity appear more spacious than usual. The mucosa is anemic, sodden and inelastic and the inferior turbinate may show mulberry degeneration. The atrophy is due to lack of use and pressure of the masses of mucus.

5. The septum is deviated toward the obstructed side in unilateral cases. The causes that combine to produce this effect are: (a) The occlusion holds the septum to its side. (b) The obstructed side is not subject to the dilating influence of the air current. (c) The V-shaped groove in the upper border of the vomer may be maldeveloped on this side, so that the cartilage has slipped out, and projects under the mucous membrane.

6. There is constantly a history of difficulty in maintaining nutrition in infancy.

Operation: The usual technic has been to operate under general anesthesia. Experience with the local anesthetics in this operation has not been satisfactory. With the finger in the pharynx as a guide, the occluding bone is removed by trephine, chisel, punch and rasp. Especial care is taken to remove entirely the projecting border of the vomer, and to smooth down nicely the edges of the newly made aperture, for otherwise recurrence of the closure by granulations will take place. The operation may be finished by passing around the septum a strip of bismuth impregnated gauze and tying this around the columella. This is changed daily by attaching a fresh strip of prepared gauze to one end of the old strip and then pulling on the free end. The change is painless and is kept up for ten days.

The growth of occluding granulations may also be prevented by combining the removal of the obstruction with a thorough-going submucous resection of the septum.

Case Report: The patient was a white male, 23 years old. The only other abnormality present was a bifid uvula. The palate was normally arched with the raphe in the midline. The choanal closure was on the left side and this side of the fase was somewhat less full than the right. Hearing was entirely unaffected, a constant finding in these unilateral occlusions. Skiagrams demonstrated clearly on the affected side the undeveloped nostril, the atrophied turbinals, the bony periphery of the occlusion (which was osteo-membranous), and the marked posterior deviation of the spetum. The parents gave the following statement: "When he was about two weeks old, something green and about an inch long came out of his right nostril on sneezing, but the left nostril never became free."

The operation was performed under light ether anesthesia. Recovery was rapid, and the sense of smell was partially regained. The after-treatment had consisted only of cleansing sprays. Six months later occluding granulations had formed. Should the chance for reoperation present itself, the essayist said that after excising granulations he would remove the posterior part of the spetum by submucous resection. This, he believes, will prevent recurrence.

DISCUSSION

Dr. Robert Sonnenschein said he had nothing to offer in the way of criticism or in addition to the subject matter, but congratulated Dr. Lebensohn on his clear and logical presentation of the subject and the Society on the acquisition of so valuable a member.

The point regarding the lack of dependence of ear conditions upon obstruction of the nares was also emphasized at the last meeting of the Illinois State Medical Society by Dr. Shambaugh. Dr. Sonnenschein thought it important to remember that while obstructions of the nose may influence middle ear conditions when they favor extension of the infection by way of the Eustachian tube, it is not necessary to remove every little spur when operating. on the assumption that it will produce difficulty with the ear. He had recently seen a case of marked deviation of the septum to one side but this patient had never complained of obstruction, as frequently happens. In this instance the patient asked whether the septum should be operated upon, and said she had been told by another man that she must have an operation because she might get a sinus or ear infection sometime in the future. As there was no obstruction Dr. Sonnenschein advised against operation.

Dr. Joseph Beck said he did not know this condition was so rare and could add six cases that he had operated in children. He offered a suggestion regarding the reclosure which the patient complained of. The electric burr is not very easily managed in the nares, even with the finger as a guide, but he believed the perforation could be very easily made by means of a large rasp which would penetrate most of the bony obstruction. If not, a hand chisel could be used for the first opening and then a rasp could be used to make the hole as large as necessary. Having completed this a hard rubber plug, which is flattened so that it will not obstruct the nasal spaces is drawn by means of a catheter into the nose and fastened in place by means of a tape drawn into the opposite nostril with a bit of gauze over the columella. He had removed a bilateral obstruction that had existed since childhood in this manner, with good results and great improvement in speech, but ten minutes after the patient was returned to his room he was called to see him because the man was in a fit of anger because he could not talk to suit him. The nasal twang distressed him and he insisted upon stuffing cotton into his nose so that he could get his old manner of speech back.

Dr. John Cavanaugh recalled the case of a child of about twelve years in whom the parents would not permit operation. The tonsils and adenoids had been removed, the latter on three different occasions, the inferior and middle turbinates had been removed and the mother told him the doctor had said something about removing some of the ethmoids on that side. Dr. Cavanaugh discovered the post-nasal obstruction in trying a through and through irrigation, but the mother would not consent to further operation.

Dr. Frank J. Novak, Jr., asked whether there was a true anosmia, and whether Dr. Lebensohn had introduced any odoriferous substance directly into the nasal cavity. He thought that only in this way could one tell definitely whether or not there was a true anosmia.

Dr. James E. Lebensohn (closing) thought the point Dr. Sonnenschein emphasized in regard to the ear conditions being only secondarily due to nasal obstruction was important.

He was very glad Dr. Beck mentioned having such a large number of cases, and felt that many cases were not reported because their rarity was not realized. He thought the profession should be more alive to this condition and thus avoid

doing secondary adenoidectomies and other unindicated operations.

Those who had used rubber tubes had found them unsatisfactory because they produced an irritating discharge and he did not know whether Dr. Beck's hard rubber plug would have the same effect. He had had no experience with the electric burr but had made the opening with trephine and rasp, very much as Dr. Beck suggested. Others who had operated by means of the burr, under local anesthesia, had not found this a satisfactory procedure.

DR. ELLISON L. ROSS read his inaugural thesis on: "Some General Effects of Local Anesthetics Administered as in Tonsillectomies."

(Abstract.)

The cause of the occurrence of excitement, faintness, dyspnea and paleness in varying degree during an operation in which local anesthetics were used, was the subject of discussion. Cocain, novocain and adrenalin were the drugs suspected of causing the disturbances by their action separately or synergistically.

In a previous paper the author had shown by animal experimentation the following facts:

1. Submucous injections of cocain and adrenalin bring on systemic reactions similar to those produced by intravenous injections of the drugs.

2. Submucous injections of small doses of cocain and adrenalin are capable of producing enormous increases in arterial and intracranial venous pressures. The intracranial venous pressure was relatively increased twice as much as the arterial pressure. In the animal series the arterial pressure was increased 223 per cent., and the intracranial venous pressure 467 per cent.

3. Submucous injections of cocain and adrenalin act synergistically. The average rise in arterial pressure due to adrenalin alone was 8 per cent., due to cocain alone was 83 per cent., and due to the two drugs injected at the same time in the same dosage was 223 per cent.

4. Sufficient cocain is absorbed from sponging the pharynx with 20 per cent. cocain to markedly increase the action of adrenalin.

5. Novocain does not neutralize the synergistic action of cocain and adrenalin.

Observations as to systolic blood pressure were made on twenty-three cases of tonsillectomy done under local anesthesia. In all cases the throat was swabbed with cocain, followed by injections of adrenalin and novocain. The strength of the cocain varied from 8 to 20 per cent., the adrenalin from 2 to 5 per cent., and the novocain from ½ to 2 per cent. A part of the cases were injected on one side and operated before the other side was injected.

The results led to the following conclusions:

1. A rise in blood pressure took place in every case. The range was from 20 to 114 mm. of mercury rise in systolic pressure. The average rise was 41 mm.

2. The cases that showed marked disturbances had an average rise of 66 mm.

3. The average of the groups of cases in which one or both sides were injected at once showed that one procedure was no better than the other.

From the results on animals and the results obtained on people, the author was led to conclude that the mechanism of the majority of the disturbances from the action of adrenalin and cocain is due to the marked rise in arterial and intracranial venous blood pressures and the very much greater relative value of the latter. These changes would give rise to intracranial venous stasis which would produce cerebral and medullary asphyxia. Asphyxia of the cerebral cortex would produce first a brief stimulation which would be evidenced by anxiety, restlessness and irritability. This would be followed by cortical depression which would lead to faintness. Medullary asphyxia would produce the dyspnea and rapid breathing and paleness.

DISCUSSION

DR. OTTO STEIN asked whether there was any attempt at controls in the experiments and whether the position of the patient was taken into consideration, whether they were upright or reclining. He believed the injection of water or salt solution would produce an effect on the blood pressure.

DR. J. GORDON WILSON said that the knowledge of the synergistic action of drugs had been known for a long time. It had, for example, been recognized that two drugs together may act on a structure, e. g., the intestines with a much greater potency than the summation of the actions of each separately. The explanation is not known. But the synergistic action of adrenalin with cocain is not to be grouped with the similarity of actions of so-called adjuvants. That cocain and adrenalin together act synergistically appears to have attracted little attention from clinicians. The great importance of the consideration of such action was shown by Dr. Ross' paper and might well make one thoughtful.

The current opinion of the conjoined action of adrenalin and cocain has been recently expressed in a text book by a distinguished clinician; namely, that (1) by injecting adrenalin one contracts the blood vessels and stops, or lessens absorption of cocain, (2) that adrenalin acts as a physiologic antidote to cocain. To the suggestion that adrenalin acts as a physiological antidote to cocain, Dr. Ross' txperiments are in contradiction. The very great rise in arterial and intracranial venous pressure from the combined action of cocain and adrenalin makes one pause and consider how little we have realized how great a disturbance of cranial circulation we have been bringing about with these so frequently and freely used drugs. It makes one pause and consider whether the advantages of swabbing a throat previous to tonsil operations in which adrenalin and novocain are injected, are not offset by the disadvantages of this synergia.

Further, these experiments indicate the explanation of the symptoms frequently seen in operations following the conjoined application of cocain and adrenalin, and that we are dealing not with a diminished arterial pressure but a rise of arterial and venous pressures.

DR. EDWIN MCGINNIS thought the paper was very illuminating and interesting. It bore out some clinical findings he had observed in using local anesthesia in nasal and tonsillar operations. Some years ago he eliminated the use of adrenalin in doing tonsillectomies under local anesthesia. He did not realize the synergistic action of the drugs, but used them with a definite idea in view. The reason for using the adrenalin was to reduce the absorption of the cocain and to reduce the bleeding at the time of operation. He decided that in doing operations under local he did not care how much bleeding there was and that the adrenalin could be eliminated. He noticed that with the topical application of adrenalin in the nose he got as much upset at times as with cocain alone, and he now paints the mucous membrane once with 10 per cent. cocain and then injects the novocain. In this way he gets less upset for the patient, probably because there is less synergistic action from the novocain with the elimination of the adrenalin.

Dr. Harry L. Pollock said he would like to see Dr. Ross experiment with the cocain application. Formerly they used the 5 to 20 per cent. cocain in operating on the nose but had a great many of the toxic effects, particularly with the weaker solution, the 5 and 10 per cent., which they attributed to the fact that they got more absorption. The higher the percentage of cocain the greater the astringent action on the blood vessels and the less the absorption. For several years they had used nothing but the cocain flakes, dipped in very weak adrenalin solution and applied to the mucous membrane. Since they have followed this plan the toxic effect has been much less pronounced. In doing a suspension or in nasal work they use the cocain flakes in large amounts and have had very few untoward effects as compared with the cocain solution. He believed this was due to the astringent action on the mucous membrane and the small blood vessels preventing absorption into the system.

Dr. Robert Sonnenschein thought this was one of the most valuable papers that had been offered before the Society in a number of years. Many of the statements made corroborated things which, from a clinical standpoint, he had felt for a long time. Warned by an experience in the Vienna Clinic some eighteen years ago, where two patients died immediately after a submucous injection of cocain, he had never used it. In recent years he had used no cocain at all except in those patients who were so sensitive that the introduction of the needles was very painful, or where the pharyngeal reflex was so active that it was necessary to use it. Preliminary to nose and throat operations he had seldom used morphin because he could not see that those patients who had received morphin had any less difficulty than occurred in those cases in which it was entirely omitted but that the opiate often did cause nausea or vomiting. He thought that the simpler the technic and the less drugs that were used, the better for all concerned. The substitution of apothesin made cocain practically unnecessary for throat work. They had found very few indications of syncope or other untoward symptoms during tonsillectomy since using a modified technique with alcohol regarding which a paper would soon be read.

Dr. George W. Boot spoke of a tonsillectomy where the operator brushed over with a 5 per cent. cocain and then injected a 1 per cent. novocain to which adrenalin had been added. The patient had a blood pressure of about 280 at the time of operation but the operation was performed because pus was exuding from every crypt. During the operation the patient developed great anxiety and complained of intense pain over the region of the heart. She went into collapse and they thought she was dead but after giving a hypodermic of morphin the distressing symptoms passed over and the next morning she was all right. She died a year later of apoplexy.

Dr. Frank J. Novak, Jr., said that in the Army when they were unable to obtain novocain they used apothesin with good results. They had unpleasant results following the use of cocain so they used apothesin topically for all nasal operations. While the induction of anesthesia required a longer time the anesthesia was as complete as that obtained with cocain. Since that time he had used 5 per cent. apothesin topically with excellent results in all nasal operations. He has not used cocain since 1917.

Dr. Ellison L. Ross (closing) said that their cases were in a partial reclining position when operated upon.

The psychic influence suggested as a cause for increased blood pressure, was always to be taken into account. The injection of water in the place of local anesthetics had not been tried. Since a great part of the work described was done on anesthetized animals it was certain that the drugs have a very large proportion of the influence exerted.

He had not tried cocain flakes but thought that the concentration would make no difference as long as adrenalin was injected afterward. The astringent action of the flakes of cocain would certainly tend to decrease the rate of absorption.

Dr. Ross' idea was not to condemn the use of adrenalin, but of cocain. He does not use cocain at all in working on tonsils, but thought that if one wished, it could be used after the injection of adrenalin and novocain. After three to five minutes the adrenalin would all eb gone and so could not exert any synergistic action with cocain.

CHICAGO OPHTHALMOLOGICAL AND CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETIES.

Joint Meeting April 16, 1923.

Dr. Robert Von Der Heydt, President of the Chicago Ophthalmological Society, in the Chair.

MELANOSARCOMA OF THE LIMBUS.

Dr. William H. Wilder had presented this patient on several previous occasions , and it had been thought that enucleation would be necessary; but intensive radium treatment had greatly improved the condition. The patient had received over 90 applications, varying in time from ten to fifteen minutes, in doses ranging from 25 mgs. to 100 mgs. Following these the growth began to disappear, so that at this time none of it was seen, even the pigment having almost entirely disappeared.

SERIOUS TENONITIS; REPORT OF A CASE

Dr. William L. Benedict and Dr. Mary S. Knight, Rochester, Minneapolis (by invitation) reported a case.

DISCUSSION

Dr. D. T. Vail, Cincinnati, Ohio, believed that Dr. Benedict had presented another ophthalmologic entity, one that must be taken into consideration in the differential diagnosis of orbital cellulitis. Any acute orbital disease which was bilateral, which had chemosis as a prominent symptom, which had immobility of the globe and deep tenderness on pressure, with pain in the eyeball would, in the future, call for a consideration of tenonitis in the differential diagnosis. Perhaps, the disease was considered uncommon because it was not recognized.

Dr. Vail recently encountered a case which was in many respects very similar to Dr. Benedict's although the diagnosis of serous tenonitis was not made. This patient, a medical practitioner, was confined to his room in one of the hospitals of Cincinnati for several weeks with acute articular rheumatism. Many joints of his body were affected with painful swelling. The infection also produced myocarditis, endocarditis and pericarditis, with effusion in the sac; also some pleural effusion which produced painful and difficult breathing. He ran an erratic septic temperature, but just as he was beginning to feel fairly comfortable he developed the symptoms of orbital abscess affecting his right eye. Dr. J. A. Thompson diagnosed ethmoiditis and advised ethmoidectomy.

The man had somewhat the same group of symptoms that Dr. Benedict described; without, however, any signs of ulcer. While serous tenonitis was not diagnosed, Dr. Vail now thought it quite likely that it was a genuine case of this disease. The patient had the intense chemosis, the pain and the fixation of the eyeball in the socket. The greatest swelling was in the region of the tear gland, and so the diagnosis was acute dacryoadenitis. After three days the trouble began to develop in the other eye and went through the same clinical process. When the second eye became involved, it was manifest there was no orbital abscess present, and hence no operation was performed. Both eyes made a perfect recovery. The vision was never affected.

Dr. Vail has incised the chemotic swelling using a sharp von Graefe knife and making many slits and stabs to create drainage, but he confessed that drainage did not result. The fluid is too albuminous to drain away. There seems to be too much fibrin present for that. He also had removed strips of the membrance with scissors, thinking to secure drainage in that way, but in this method the drainage was not satisfactory. The procedure that Dr. Vail had found did best in cases of extreme chemosis was complete tenotomy of the

orbicularis palpebrarum muscle. This was a form of canthotomy at the external canthus, performed, not in a line with the palpebral fissure, but by cutting the ligament across at right angles, to sever completely the orbicularis muscle from its outer attachment; cutting obliquely upward with one cut and obliquely downward with the other, and in doing so severing skin, tendon and mucous membrance at one clip. In this way the tension of the unyielding lid margins was broken, permitting the eyelids to fall away and relieve the stasis of circulation, the increased diapedesis and the transudation of serum within the tissue. It was never necessary to repair these cuts at the outer canthus, for in ten days time after the original trouble had subsided the cuts across the tendon of the orbicularis would have healed without leaving the slightest deformity.

Dr. George W. Boot was reminded of a case which he saw at the Cook County Hospital last year. A man of about 40 years was admitted for an emergency tracheotomy. There was marked stenosis of the larynx with a very obscure history of its origin. The condition in the larynx resembled scleroma. The right eye had been removed several years before on account of accidental injury. The left eye was markedly proptosed and immovable. The conjunctiva was chemotic and protruded between the lids. The periosteum at the margin of the orbit was thickened. A portion of this thickened orbital margin was removed for miscroscopic examination and was reported to be simply inflammatory thickening. No pus was found in the orbit at any time. The conditions in the larynx and in the orbit were apparently similar and related processes. The Wassermann was negative and antisyphilitic treatment was without effect on the process. X-ray pictures failed to show any new growth in the orbit. The patient was under observation for about a year, and when last seen the condition was unchanged.

Dr. Boot asked Dr. Benedict what amount of motion there was in the eye after the process had subsided. He criticized the treatment by salicylates, because of the small dosage, and said that if salicylates were to be given at all not less than 100 grains a day should be administered.

Dr. Benedict, in closing the discussion, said that the ulcers that occurred in the case reported were not a part of the disease, and in only one reported case were ulcers found to complicate the course. He believed they were due primarily to the chemotic condition of the conjunctiva, folding over the cornea, interfering with its nutrition, and allowing a recess where an ulcer could form. Also, the lower margin of the upper lid struck the cornea, and rested at the point of the chemotic junction, thus aiding the production of ulcer. The ulcer was a complicating factor in the diagnosis. If, at some time during the two months the condition had existed before examination, a corneal ulcer had developed, and the eye had become secondarily infected, it would have been impossible to rule out panophthalmitis. Because the fundus was clear, and there was no evidence of infection in the other eye, and because it was known that the two eyes had been the same up to the time the ulcer appeared, he considered that he was dealing with a disease in which the corneal ulcer was a complicating factor. If the tenonitis had occurred in one eye only, diagnosis would have been more difficult.

As to Dr. Boot's question regarding the motility, the eye now had full motion. One would naturally expect some restricted motility, because Tenon's capsule was connected with the walls of the orbit by dense bands which had some muscle fibers in them, which served as check ligaments, and the check ligaments were involved in the inflammation. If those bands were made thicker and stronger following the inflammation and became contracted, one would expect limited motility, but this patient had full return of motion.

The treatment was largely experimental because he could find no precedent. If larger doses of milk had been given, he might have obtained some relief. At that time, he believed it advisable to start with from 3 to 5 c.c. of milk, and unless there was a reaction to increase to 25 or 30 c.c. However, subsequent experience with milk had led him to believe that large doses should be given. The salicylates were given in as large doses as the patient could tolerate, although he knew that larger doses were indicated. This patient could tolerate only from 50 to 60 grains a day.

That this case could not be considered one of tenosynovitis was borne out by the structure. There was no synovial membrane or fluid within the capsule, comparable with that found along tendons. This should be borne in mind, and possibly every reported case would throw more light upon the character of the disease.

OPERATIONS FOR LACRIMAL DISEASE

Dr. Joseph C. Beck, from the rhinologist's standpoint, presented his personal experiences with the various operations on the tear sac, beginning with the Toti, followed by the West with modifications, by Clark, and then by Beck's modification of West, then the Yankauer, Sauer, Wiener, Halle, Mosher, and finally the most recent development of a method of his own.

He gave no definite statistics as to results, but stated that practically all of these methods were a sad commentary on successful surgery, in the attempt to obtain normally acting physiologic structures. Most of the cases were reoperated with the removal of the tear sac, either by himself or others. The greater number of those not yet reoperated were going about with an epiphora. He brought out the importance of the pathologic changes of the tear sac, as to the indication for the operation. He also brought out the points concerning reparative osteitis in the bony excision of the lacrimal groove. The principle in his own latest modification of these operations consisted in the retention of a hard rubber tube in the newly made tract between the tear sac and the nose. This tube remained in place for ten days, thus preventing the reclosure by the reparative osteitis.

DISCUSSION

Dr. Harry Gradle agreed with Dr. Beck, that he had not seen satisfactory results from tear duct operations of any type. The flow of pus was stopped, but in a large percentage of cases a stenosis of the passage remained; and restoration of function was accomplished in less than 50 per cent of the cases. In getting results, restoration of function must be kept in mind.

He thought there was no difficulty in the chronic suppurative cases in stopping the pus, but that it was extremely difficult to accomplish the opening of the passage and keeping it open. In a few cases, medical treatment, added to the probing, would accomplish this purpose, but only in a comparatively small number. Operative measures, also in a small percentage, would accomplish this, but the solution of the problem had not yet been found. He hoped that Dr. Beck's operation would prove the solution, but thought it remained for time to show. Restoration of function must occur before a case could be considered cured. To accomplish that, one of the absolute essentials was that the lower canaliculus should not be slit, as had been done in the past. The profession was getting away from this and fewer and fewer slit canaliculi were seen at present.

Dr. Gilbert E. Seaman, Milwaukee, Wisconsin, said chronic suppurative dacryocystitis was a constant menace to the eye. He did not regard a radical procedure as being a failure because there was occasionally some mucous secretion. He had had several cases where the patient had been entirely satisfied with the result. From the reports of the lack of success from the intranasal operation, he would not abandon the ophthalmic operation for any intranasal procedure he knew anything about.

Dr. Michael Goldenburg did not agree with Dr. Gradle's statement, "that one could not state a cure had been effected, unless the function of the part was restored." If a part was so diseased that it could no longer function it must be re-

moved. A gangrenous leg, beyond the stage of restoration, would have to be amputated. Its replacement by an artificial one could not be expected to function normally. The statement that only 50 per cent of the cases were cured, had not been his experience. It was true, that some epiphora continued after the extirpation operation, but, surely, not so annoying or marked, and above all, the dangerous suppurating mass had been removed.

One should not lose sight of the fact that a lacrimal sac that came to the operating table had been pouring a highly infectious material into the conjunctival sac for months. This naturally must result in a chronic conjunctivitis, and the mere removal of the diseased lacrimal sac could not be followed by an immediate normal conjunctiva. The diseased conjunctiva then should be appropriately treated. It was further true that in some cases in spite of this treatment, epiphora still persisted. One should then remove the accessory lacrimal procedure. The majority of cases complained of epiphora only when exposed to the wind.

The lacrimal sac extirpation did not demand extraordinary dexterity or technic. It did not destroy normal tissue and did completely remove a diseased part that was dangerous to the eye. It had been his observation in the last few years, in a majority of cases to find a cleft or dehiscence in the bony floor of the lacrimal fossa through which a Bowman probe could readily pass into the ethmoidal region. He was inclined to think that probably many of the suppurating sacs were secondary to ethmoidal disease. He suggested careful investigation of these parts.

It was his practice in a suppurative case that had existed for some time, which did not respond to ordinary syringing in a reasonable time, to remove the sac. He rarely used the probes for any other purposes than exploration. His great objection to all the intranasal operations was that they did not remove a suppurating mucous membrane; that pus continued to be expressed into the conjunctival sac, and if the opening into the nose remained patent, there was the added danger of infecting the paranasal sinuses while in the recumbent position during sleep.

CLARENCE LOEB, *M. D.*,
Corresponding Secretary.

CHICAGO OPHTHALMOLOGICAL SOCIETY

May 21, 1923.

DR. ROBERT VON DER HEYDT, President

CYST OF THE IRIS.

DR. GEORGE S. DUNTLEY, Bushnell, Illinois, said that a patient came in three weeks previously, complaining of not being able to see well with the right eye. The history was, that when he was a baby 18 months old, he fell on a nail which penetrated the eyeball. He had no care other than that of a general practitioner, who said, "he had a black eye." He was accepted in service with a vision of 20/40. At the present time his vision was 20/100. The pupil was partially dilated and there was a scar on the iris. The pupil was slit like. There were two lobular cysts of the iris extending down on each side, partially obstructing the pupil. A portion of the lens was in the lower part of the pupil. The case had been seen by many ophthalmologists, and considered by some to be a foreign body, but Dr. Duntley believed it was a lobulated cyst.

DISCUSSION

DR. GEORGE F. SUKER said he had seen the case in the morning, and by transillumination in a very dark room it proved to be a cyst of the iris. In the lower portion of each lobulated cyst there was debris, probably degenerated portions of the iris, with clear fluid above. He did not believe it was malignant. The reason it was lobulated was because the capsule in the upper portion had caught the iris. With transillumination, a red fundus reflex was seen clearly throughout both these cysts. The iris was thinned out or atrophied and depigmented. The patient had relatively fair vision. The capsule was apparently intact. As to a foreign body being present, there was no evidence of siderosis. Undoubtedly, some conjunctival tissue would be found in the upper wall of the cyst, on the order of an inclusion cyst. The vitreous was not prolapsed into this cyst, as the posterior capsule was apparently intact.

DR. E. V. L. BROWN said it was interesting that an eye injured at the age of eighteen months had apparently gone on to the usual development of a normal eye. Many eyes that were injured in early childhood degenerated, and the patient had a much smaller eye than normal.

INFLUENCE OF OCULOMOTOR ON BEHAVIOR OF PUPIL

DR. GEORGE F. SUKER gave a detailed anatomic description of the pathways for the various pupillary reactions, illustrated by numerous charts. The sympathetic, sensory and motor nerve tracts for the pupillary reactions were schematically drawn. His remarks were an introduction to the papers of Drs. Cushman and Lifschutz.

DR. JACOB LIFSCHUTZ stated that the iris was under the influence of three nerves: 1. The oculomotor which innervated and controlled the sphincter. 2. The sympathetic which supplied the dilatator muscle and the blood vessels of the iris. 3. The trigeminus which supplied sensibility to the tissue of the iris.

The normal pupillary reflexes could be divided into four groups: 1. Those depending upon stimulation of the pupillomotor zone in the retina. 2. Those associated with the ocular movements. 3. Those resulting from stimulation of the sensorium of the body. 4. Those originating in the cortex.

A lesion destroying the pupillary fibers between the point of their separation from the optic tract and the sphincter nucleus would produce either a unilateral or bilateral Argyll Robertson pupil; i.e., the reaction of the pupil to light would be abolished, while the associated reactions to convergence and accommodation would remain unaffected. A similar condition would also result from a destruction of one or both sphincter nuclei, or of the fibers leaving the sphincter nucleus, before they joined the fibers from the accommodation center and became incorporated in the trunk of the third nerve.

In considering the disturbances of the consensual light reflex, it must be borne in mind that this reflex was dependent upon the integrity of the centripetal pathway in the illuminated eye, and the centrifugal fibers of the tested eye. This was due to the semidecussation of the pupillary fibers at the chiasm, and therefore the reflex might be absent in an otherwise perfectly normal eye.

One of the most important clinical pupillary entities, which deserved special consideration, where the condition of the pupil was a result of a third nerve lesion, was the so-called Argyll Robertson pupil. While this condition might be present in such cases as general paresis, cerebral lues or other cerebral diseases, multi-

ple sclerosis, etc., it was so frequently associated with tabes, occurring in about 70-95 per cent of tabetics, that it was almost pathognomonic for this disease. In fact, neurologists considered the Argyll Robertson pupil as one of a triad of symptoms of tabes, the other two being incoordination and loss of knee jerks.

Tabes being a progressive disease, it was obvious that the loss of the light reflex was a symptom which might develop gradually, but when fully established, the condition was, as a rule, permanent. Hence, in our examination, one must not always look for a complete loss of light reflex, which probably occurred in the later stages of the disease. A derounded, irregular pupil, a relatively delayed, feeble or sluggish reaction to light, an incomplete and ill sustained miosis to strong illumination, or a perceptible difference in strength and time of pupillary reaction to accommodation and light—all possessed unmistakable significance, and should immediately arouse suspicion of a possible Argyll Robertson pupil and tabes. The diagnosis of the true condition of the pupils was also especially important because very frequently, according to most authorities, the Argyll Robertson syndrome might precede the fully developed disease for a long time, and often it was the first definite premonitory symptom of neurosyphilis.

As to the size or width of the Argyll Robertson pupil in tabes, it might be of average or normal size, miotic, or dilated, though, as a rule, most tabetic pupils were contracted, often to a pin point. In those cases where there was a paralysis of the sympathetic with loss of the sensory reflex, in addition to a third nerve lesion, there was an absence of the dilatator impulse with a spinal miosis. If, however, the sympathetic was intact, the pupils would be dilated, usually unequally. In general, miosis was considered an early symptom, while mydriasis came on relatively late in the disease and was frequently associated with advanced optic nerve atrophy and blindness, with loss of reaction to accommodation and convergence, and with ophthalmoplegias.

As to the exact seat of the lesion producing the Argyll Robertson pupil, positive proof was wanting. So far as the nerve was concerned, the weight of evidence was that the lesion was between the anterior corpora quadrigemina and the sphincter nucleus. With reference to the sympathetic, the lesion might be in the fibers leaving the Gasserian ganglion for the pupil dilator, anterior to the place where the sympathetic fibers were given off to the ciliary ganglion. Or there might be no active lesion of the sympathetic at all. The spinal miosis would then be explained by the loss of the sensory reflex which usually occurred in tabes, and which was responsible for the absence of the stimulation of the sympathetic, and hence the latter did not exert its influence over the pupil, which remained contracted. It was hardly possible that the spinal miosis was due to a lesion of the sympathetic, posterior to the Gasserian ganglion, for such a lesion would produce Horner's syndrome, which was not present in tabes.

EFFECT OF THE SYMPATHETIC IN CONTROL OF THE PUPIL AND PURE SYMPATHETIC LESIONS

Dr. Beulah Cushman stated that the pupil dilator fibers were of sympathetic origin. Physiologically, the autonomic or sympathetic system regulated all functions which were involuntary. They were capable of functioning automatically, yet were regulated and inhibited by central tonic impulses.

The superior cervical ganglion, which was the uppermost sympathetic ganglion in the neck, sent a branch upward. This branch divided, forming the carotid and cavernous plexuses. Parasympathetic fibers, which arose in the midbrain and medulla, also went to the ciliary ganglion (Sollman.)

Any sensory stimulus caused a dilatation of the pupil. To follow this arc, the stimulus passed along the centripetal or receiving fibers to the posterior columns of the cord and to the center, which was probably located in the medulla. From here, all the centrifugal fibers to the pupil passed by way of the Gasserian ganglion, with its sympathetic filaments, the ophthalmic branch and the long ciliary nerves to the dilator cells of the iris. The relation of the pure sympathetic fibers to the control of the pupil could be studied through the effect of lesions and drugs.

Pure sympathetic lesions might be irritative or destructive. The irritative lesion caused a mydriasis to a varying degree, and a definite symptom complex. Spastic mydriasis might be differentiated from a paralytic, in which the third nerve was paralyzed, by the use of eserin, as eserin would cause a contraction of the pupil with the third nerve endings intact.

Irritative mydriasis was usually due to pressure from an enlarged thyroid, cervical glands, or an aneurysm. Apical tuberculosis with adhesions might cause an irritative mydriasis, and might go on to a paralysis of the cervical nerves involved.

The symptoms of the destructive, pure sympathetic lesions, had been described by Claude Bernard and Horner, and were called the Claude Bernard-Horner syndrome. The lesions were due usually to destruction of the superior cervical ganglion by trauma or pressure, such as stab wounds, burns, their scars and tumors. Negro recently noted that the syndrome was a common stigma of degeneration.

A destructive lesion which involved one of the long ciliary nerves would cause a flattening of the pupil in that half, due to the loss of tone through the dilator fibers, whereas with an irritativa lesion, that portion of the pupil would be dilated.

The miosis in the Argyll Robertson pupil was probably due to a loss of the sensory reflex, involving the centripetal fibers, posterior columns or the preganglionic fibers. The diagnosis of a spastic mydriasis or miosis and a paralytic mydriasis or miosis had been studied in the pharmacologic as well as the physiologic laboratory, by the use of drugs. Nicotin paralyzes all ganglionic synapses of the sympathetic, as well as those of the parasympathetic. Cocain in-

creased the peripheral excitability of the sympathetic system. Eserin counteracted cocain mydriasis and produced miosis by stimulating the third nerve endings. Epinephrin had a mydriatic effect under certain conditions in mammals, by producing a pure peripheral stimulation restricted exclusively to the sympathetic system. Atropin varied according to the dosage used; in usual amounts the peripheral fibers of the oculomotor were paralyzed and mydriasis occurred; with increased doses paralysis of the muscle of accommodation occurred, or cycloplegia. Dr. H. McGuigan stated that atropin was a paralyzing agent in the usual doses, but with larger doses produced some anesthesia.

DISCUSSION

Dr. Julius Grinker said that ophthalmology and neurology met in various phases of practice. The circumstance that one was practicing either of these specialties did not make it certain that he always kept anatomic and physiologic details in mind. After one had been in practice many years he usually forgot theoretic details, while acquiring practical points in examination and treatment. It paid to occasionally go back to theory because it might be found that even theories might effect a change in practice.

The various theories advanced served as a working basis, and no one would think of discarding them any more than he would think of giving up the anatomic theory because of the absence of concrete proof. For instance, there were several theories to explain the Argyll Robertson pupil; it mattered little which was the true one. The really important fact was, that there was an Argyll Robertson pupil, and that it definitely meant certain things—almost always syphilis of the nervous system. He had seen it, however, in encephalitis lethargica and in other conditions, notably in chronic alcoholism. Whether the Argyll Robertson pupil was only a sign of syphilitic infection of the nervous system, or whether it was always a forerunner of tabes or general paresis, no one could tell. It was quite certain that Argyll Robertson pupils had been present for a period of ten to fifteen years, and then all of a sudden general paresis or tabes had developed. In such cases the Argyll Robertson pupil must be considered as the premonitory sign of parenchymatous neurosyphilis.

Dr. Harry Gradle asked Dr. Suker what was his opinion about the so-called pupillomotor area which Hess described some fifteen years ago. Did the fibers from the pupillomotor area run simultaneously with the light perceiving fibers or were they separate fibers? Judging from the anatomic chart, there were individual pupillomotor fibers from Hess' area on the retina, because of the branching from the optic tract to the third nucleus. That indicated very clearly a separation of the perceiving and motor fibers. In other words, if this chart was correct, there were two separate types of fibers from one area in the retina. That was still open to discussion. He said it stood to reason that there could only be one location for the lesion of Argyll Robertson pupil, that was between the geniculates and the third nucleus.

Dr. C. A. Burkholder said there were two or three points in the papers that ought to be very forcibly impressed on the audience. One was the terrific influence that the sympathetic nervous system had upon all vital processes. Another important thing was the pupillary arc. The essayists mentioned it, but there was considerable difference in opinion among oculists as to its exact location. Ophthalmologists often said it went back of the cerebral cortex. This was not so. The light reflex arc never went behind the primary nuclei of the optic nerve. The preponderance of opinion was that this was the place where it was given off, and from there it ran down to the third nerve ganglion. It used to be called Meynert's bundle. What he wished to emphasize was that when one got a pupillary reaction from direct light, the lesion must be behind the primary nuclei of the optic nerve.

Another point he emphasized was the location of the ophthalmic ganglion. The ganglia associated with the fifth nerve were the Gasserian, the optic, the ophthalmic and the submaxillary ganglia. They derived fibers from the motor, from the sensory and from the sympathetic systems.

He said one of the drawings might be misleading; it gave the impression that the tract went directly back to the cerebral cortex, but in reality it did not. The same error was to be found in the textbooks.

Dr. Suker in closing, answered Dr. Gradle's question by saying that the retina was composed of two sets of fibers, light and motor fibers. He agreed with him regarding the opinion of Hess, that it was impossible to get any contraction from the extreme periphery. The pupillary fibers were not as intimately associated as were the sympathetics and the third nerve or the large vascular fibers. They intermingled but did not go into the anterior geniculate body.

He emphasized, as did Dr. Grinker, that the absence of the reaction to light on one side might be permanent for many years before it was present on the other side. It was reasonable that the inequality and irregularity in the Argyll Robertson pupil did not come on in both sides at the same time. The irregularity of the pupil was due to cicatricial changes in the motor and sensory impulses.

He was glad Dr. Burkhardt brought out the point about optic radiation. These arcs were given in all the textbooks. Optic radiation was in the internal capsule and did not go back to the cortex.

Clarence Loeb,
Corresponding Secretary.

CHICAGO OPHTHALMOLOGICAL SOCIETY

Monday, October 22, 1923.

Dr. Robert Von Der Heydt, Presiding.

GUMMA IN ORBIT

Dr. G. F. Suker described the findings in three cases of intraorbital Gumma with optic nerve involvement, and annular gumma of the conjunctiva, but the patients did not report at the meeting.

MUCOCELE OF ETHMOID WITH PROPTOSIS OF RIGHT EYE

Dr. Richard L. Bauer described the above case and presented the patient.

MEDULLATED NERVE FIBERS IN THE RETINA

Dr. Clarence Loeb presented a colored drawing of this condition, the work of a young artist in the Michael Reese Dispensary, Eye Clinic.

CONGENITAL PTOSIS CORRECTED BY THE HUNT-TANSLEY OPERATION

Dr. Clarence Loeb presented this case.

SYNECHIA OF THE VITREOUS TO THE CORNEA

Dr. H. M. Cottle (by invitation) read a paper on the above condition.

DISCUSSION

Dr. Robert Von Der Heydt stated that Vogt has found that these adhesions nearly always follow discission. However, this may be true only if the vitreous is semifluid in nature. Aqueous and vitreous are very compatible in the anterior chamber of an aphakic eyes. With the slit lamp, it is very easy to determine the consistency of the vitreous in the presence of a fairly transparent lens. By means of our older methods, this is possible only if vitreous opacities are present, as they betray the fluidity of the vitreous by their movements.

Dr. W. H. Wilder stated that Treacher Collins had preceded

Meller in describing adhesions of the vitreous to the cornea. His findings were based on the examination of pathologic specimens. However, he claims that during the discission, a small tag of capsule is dragged into the corneal wound, which aids the formation of the adhesion of the vitreous, and is the real cause. Secondary glaucoma probably arises as a result of this capsulo-vitreo-corneal adhesion. Another point to be noted is the fact, that there is more danger of vitreal adhesion when the discission is made through the center of the cornea than elsewhere.

Dr. Von Der Heydt said that the slit lamp shows that many of these strands are thin and very delicate. It is impossible to mistake them for capsule shreds. Incidentally, he wished to say that the text book definition of cataract, as including an opacity of the capsule, needs to be changed. Congenital or inflammatory deposits may be formed on it, but the capsule in itself never become opaque, nor is it absorbed in aphakic eyes. In a shrunken lens, partly absorbed, it is wrinkled. These wrinkles conform to the depression between the lamellae of the cloudy lens substance, and present double, transparent, glassy lines.

Dr. H. S. Gradle said that for adhesion of the vitreous to the cornea, it is necessary that it be preceded by a rupture of the posterior capsule and the hyaloid membrane. As both of these are comparatively firm, and as a direct lesion of them during discission is infrequent, it is easy to see why adhesion of the vitreous to the cornea is a rather rare finding. He reported a case, where discission caused a lesion of the posterior capsule, followed by hernia of the vitreous, which moved back and forth synchronously with the patient's breathing, but as the hyaloid membrane was not injured, the hernia eventually receded.

Dr. H. M. Cottle (closing) said, that it was interesting to know that the pathologic findings had preceded the clinical. His attention had been drawn to this condition by the deformed pupil described in the third case.

TIME REACTIONS OF THE PUPIL

Dr. H. S. Gradle described his method of investigating this subject and the instruments employed. Observations were made of the movement of the pupil by means of moving pictures, and the time periods of the different phases calculated from them. A brief latent period was followed by a primary contraction, this by a secondary contraction, which was followed by a primary and a secondary fatigue dilatation. The paper will appear in full in this Journal.

DISCUSSION

Dr. G. F. Keiper, Lafayette, Ind., said that Dr. Gradle's findings would be of great importance in psychologic research, where time reactions play a great role.

AFTER RESULTS OF STRABISMUS OPERATIONS

Dr. C. W. Hawley read a paper describing his experiences in the operations for strabismus and their after results. He had had successes and failures in all forms of operations—tenotomy, advancement and tucking—but he believed that the form of tucking operation as advocated by Dr. Woodruff was the best.

DISCUSSION

Dr. H. W. Woodruff said that he was glad to know that Dr. Hawley had been using the tucking operation so long, and with such good results. The most extreme cases can be corrected by combining the tucking, if necessary, with a partial tenotomy. It is rare that binocular vision and fusion can be attained. One such case he had reported before this society several years ago—a case of divergent strabismus in a myope.

Dr. G. F. Suker said that binocular vision and binocular fusion are two separate and distinct coordinate functions, obtained only in eyes with normal muscle balance and equal visual acuity. Eyes with unequal vision hardly ever have binocular fusion. Five points are necessary for a perfect result—cosmetic, binocular vision, binocular fusion, stereoscopic vision and stereognostic vision. This is obtained only in cases of alternating strabismus, with equal vision in the two eyes. Any advancement operation is not mechanically scientific, while any shortening operation is. An advancement disturbs the lever principles of the muscles. Ocular muscles are levers of the first class, and a successful advancement puts that muscle in levers of the second class. Though mechanically efficient, harmonious and synchronous in their action when all muscles are of one class, an interposition of a muscle of another class will cause more or less cyclophoria. Advancement operations, in most instances if not in all, are but shortening operations, as the base of insertion is only enlarged by establishing a new insertion, as the tendon stump becomes firmly adherent to the overlying advanced muscle, and the advanced section is necessarily throughout its entirety adherent to the sclera. Advancements cause cyclophorias in nearly every case where the advancement is successful, while shortening does not. He has never succeeded in obtaining 20/20 vision in an amblyopic strabismic eye, and does not believe that it and fusion can be obtained by amblyoscopic or stereoscopic exercises.

Dr. G. H. Mundt asked at what age the essayist advised operation, and whether he made a preliminary attempt to correct the strabismus by refraction. He considered the above two points so important that they should at all times be considered before one can discuss the results of strabismus operations.

Dr. C. W. Hawley (closing) said, that most of the discussion was not pertinent to the paper. Some of his patients had developed binocular vision and binocular fusion. He agreed that an advancement operation was not as good as a shortening one. The paper was intended only to give some singular results of strabismus operations, and to show that binocular fusion and vision were possible after them.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

The regular monthly meeting of the Chicago Laryngological and Otological Society was held at the Auditorium Hotel, Monday, November 5, 1923, at 8:00 P. M.

The President, Dr. John A. Cavanaugh, in the Chair.

PRESENTATION OF CASES:

Dr. J. Holinger presented a case of Bezold abscess. The patient was a man, fifty-eight years old, who showed a scar behind and above the left auricle through the tip of the mastoid down the neck to within three fingers of the clavicle. One centimeter below the mastoid the scar had a branch forward and downward and five centimeters to the rear there was another short scar as a consequence of a counter-incision. These scars gave a slight idea of the large size of the abscess which reached nearly around the whole left half of the neck. Medially from the mastoid process the typical large cell which led to the perforation into the neck was found in the floor of the temporal bone. It extended forward to close to the facial nerve, yet no injury was done to the nerve at the operation. The cell was attacked from behind the mastoid process, the dura was exposed and granulating and at the time of presentation the drum-membrane was closed and hearing was two meters for whisper.

This patient was one of four with nearly identical conditions that Dr. Holinger observed last spring. They all had been treated before he saw them from six weeks to two and one-half months and had been

seen by general practitioners and surgeons. This patient was treated for several weeks in a well-known clinic. The connection of the suppuration of the ear with the swelling on the neck was not even suspected. The unusual feature of all four cases was the slow course and the fact that they all got well. The pus does not always stop in the neck. The descent into the posterior or anterior mediastinum is sometimes very rapid.

Dr. Edwin McGinnis presented three cases of foreign body in the bronchus.

Case 1: C. H. F., age 4 years, on September 7, 1923, inhaled a glass headed shawl pin about two inches long. He strangled slightly and the mother saw the pin at the base of the tongue but was unable to remove it. X-ray revealed the pin in the right bronchus, pointing upward. The pin was removed by bronchoscopy on September 11th, some difficulty being experienced in freeing the point which was imbedded in the mucous membrane. The temperature, which was 100.2°F. on admission to the hospital gradually subsided and recovery was rapid.

Case 2: A boy, aged 3 years, on June 6, 1923, apparently swallowed a nail with which he had been playing. The stools were watched for six days but the nail was not recovered. The boy developed a slight cough and X-ray examination showed the nail in the right bronchus. No pain was complained of. On June 13th, 1923, upper bronchoscopy was done, without anesthesia. During the manipulation the nail was grasped but slipped out of the forceps and went into the left bronchus. It finally was grasped and removed. The temperature was 99.2°F., and rales were present on both sides the day of operation. Recovery uneventful.

Case 3: T. E., age 2 years, was playing with paper clips and one slipped down his throat. He strangled, became cyanotic and commenced to cough violently. X-ray examination showed the clip at rest in the upper part of the trachea. The child had a crowing respiration and spasmodic cough. At the Presbyterian Hospital with direct laryngeal speculum the clip could be seen, was grasped with forceps and withdrawn. Recovery uneventful.

Dr. Robert Sonnenschein, as a dinner talk, gave an illustrated address on "Functional Tests of Hearing."

Dr. Alfred Lewy presented a paper on "Vucin—The Use of in Intracranial Infections."

ABSTRACT

Vucin, a cinchona derivative, has been reported as a curative agent in septic meningitis and other septic conditions by German clinicians. After experimental use on dogs Dr. Lewy reports its use in eight cases of clinical meningitis. Methods of preparation and application are described. Analysis of the cases reported in the literature follows and detailed reports of the cases seen by Dr. Lewy. The summary is as follows:

All the cases described showed clinical symptoms of meningitis, viz.: Fever, neck rigidity, Kernig sign, headache, vomiting, spinal fluid under pressure, cloudy and containing great increase in leucocytes. Five of the eight had a positive culture from the spinal fluid and all these resulted fatally. Of the other three two were brain abscess with sterile meningitis. One recovered after drainage and vucin treatment. Another died of impaction of the medulla in the foramen magnum. The third was a case of meningitis following mastoiditis, with cocci in the smear but sterile culture, with recovery.

CONCLUSION: Vucin seems to have no value injected intraspinally in generalized septic meningitis. It is suggested to try it in the cisterna magna or by subarachnoid irrigation. As a preventive in injuries or operations where the meninges are threatened with infection before the meningitis becomes generalized it may have value, but the observatoin of many more cases is necessary to determine this.

DISCUSSION

Dr. Robert Sonnenschein said he did not know whether the very favorable case referred to by Dr. Lewy was the one Dr. Lewy had seen with him or not. This case was that of a litle girl aged nine or ten who had had an acute otitis media for ten days. When seen by him she had a rapid pulse, a temperature of 104° F., rigid neck, severe headache, Kernig and showed the picture of a well-developed meningitis. Spinal puncture showed cloudy fluid under markedly increased pressure, 3,000 cells per millimeter, bacteria in smear but not on culture. At operation, which was performed at once, much destruction was found with the sinus exposed and the dura quite gray. The following morning another spinal puncture was made and the cell count was 7,000 and vucin was injected. The patient had a stormy time for four or five days, with a high temperature, but gradually made a complete recovery. Dr. Sonnenschein thought that as long as there was no harm done when the vucin was injected at the time of the spinal puncture there might be no objection to its use.

Dr. Harry L. Pollock said that about a year or so ago he had a case of meningitis in a young lady which followed a very slight otitis media. The otitis media cleared up within a couple of days but the other symptoms developed, viz., labyrinthitis and meningitis. Spinal puncture revealed as high as 8,000 leukocytes but culture was sterile. No bacteria were found. They cultured it and injected guinea pigs and rabbits and at that time Dr. Lewy advised injecting vucin but Dr. Pollock thought this was not advisable unless bacteria were present. The patient ran a stormy course for two weeks. They did several spinal punctures and used intraspinal medication of serums and the patient recovered sufficiently to sit up when, without any warning, she got a recurrence and in the course of several weeks died. During the course of the illness twenty spinal punctures were made but no bacteria were found.

Dr. Pollock said that they found many cases which improved temporarily without any treatment, the so-called protective meningitis. They tried vucin treatment on another case which followed two mastoid operations two weeks previously when streptococci were found. Vucin was injected but the patient died. Dr. Pollock thought that none of the cases were conclusive unless bacteria were found. He believed that these were all extreme cases and that the vucin should be used as early as possible, especially when bacteria are present.

Dr. Peter Bassoe said that this was the first time he had heard of vucin, but it had occurred to him that an agent like this which is possibly neutralized by the spinal fluid would be better injected by cistern puncture simultaneously with spinal puncture, thorough irrigation being thus possible. Such irrigations have been done with other substances, introducing the fluid by cistern puncture and allowing it to run out by means of the spinal puncture. He thought cistern puncture was a comparatively easy and safe procedure.

Dr. Norval H. Pierce asked for Dr. Carlson's opinion as to

how much effect could be expected on tissues in cerebrospinal meningitis if the spinal fluid could be changed into a germicidal fluid. Is not death produced not by the content or condition of the cerebrospinal fluid but by the pathological process that goes on in the arachnoid and especially in the pia; in other words, within the blood vessels themselves or in the perivascular spaces? It seemed to him that no matter what antiseptic might be injected into the cerebrospinal fluid it would have very little effect upon the condition of the vascular system of the pia or arachnoid unless the injected substance was specific for the pathologic process in the tissues and gained access thereto. It is known, for instance, that the reason there has been so much late syphilis is that the arsenical preparations that have been used up to the recent past have failed in their penetrative powers. Preparations which have greater penetrative power are being produced so that the spirochetes can be killed off in the nervous tissue itself. Dr. Pierce believed this same thing had a bearing on the question of all injections into the cerebrospinal fluid and asked whether the hope that these injections, whatever they may be or whatever effect they may produce in the cerebrospinal fluid *per se*, might be beneficial in the pathology of septic meningitis was justified or would they prove futile?

Dr. A. J. Carlson was inclined to agree with the general trend of Dr. Pierce's remarks and said that certainly he should not feel like injecting vucin into the kind of patients described until he knew something more of what the drug did when introduced simultaneously with bacteria, or with bacteria introduced a little earlier or a little later, in the spinal canal of experimental animals. He was disappointed that Dr. Lewy had not done this before using it on patients.

Dr. Carlson believed that killing the bacteria in the spinal fluid would probably be of very little avail unless the drug introduced penetrated freely through the meninges and through the cells and connective tissue into the surrounding areas. One very clear example of that is offered in the gut. A number of years ago in some research work in their laboratories Dr. Dragstedt attempted to sterilize the gut by all means short of killing the intestinal mucosa. He applied antiseptics in strengths that could not possibly be applied anywhere else, on a small portion of the gut, but found that the bacteria between the cells were still there and ready to do whatever damage they could in that position. However, while very little is known as regards the nature and control of cell permeability, there is no doubt that many substances go through or diffuse through the tissues entirely independent of any circulation of fluid, cerebrospinal, lymph, or blood. Dr. Nultzer showed a number of years ago that one could cut out the heart of a frog and inject a drug peripherally and that after a while the drug worked through the entire body by diffusion. Bactericidal drugs to be effective in meningitis must go through the membranes and to the cells. Sterilization of the spinal fluid itself means very little.

Dr. Alfred Lewy asked Dr. Carlson to state what the present status of our knowledge is regarding the diffusion of the spinal fluid.

Dr. Carlson said that our knowledge was very limited. We do not know where it comes from or where it goes to or what it does while it is there. Some claim that it is secreted by the choroid plexus and there is some evidence in favor of that theory. Dr. Weed at Baltimore and Dr. Cushing at Boston take this view,—but it is still a theory. Dr. Becht at Northwestern has done some work that supports the theory of filtration from the blood. There seems to be no doubt that it can be absorbed along the entire course of the meninges. Carlson thought that if it was possible to remove the entire choroid plexus the spinal fluid would still form.

He considered the point raised by Dr. Bassoe important and would not expect much more vucin injected in small amounts and under slight pressure into the lumbar region, as he thought very little if any would get up into the brain. He believed the drug would be absorbed before it reached the brain but if drainage was established, up or down, mechanical transport of the drug would be facilitated. However, as Dr. Pierce said, if vucin does not get into the cells or does not retain its bactericidal action after it gets into the cells direct bactericidal action in the spinal fluid itself would be of little clinical value.

Dr. J. Holinger mentioned the observations of Professor Mouckow, which seem to show that the cerebrospinal fluid is not homogenous, at least not always. For example, it was found that one may get a positive Wassermann reaction in the fluid of the lower part of the vertebral column and a negative Wassermann reaction in the upper part. Furthermore, in cases of injury it has been found that in one part of the spinal canal the cerebrospinal fluid may be decidedly bloody while in another part it is clear. Of course these observations have to be confirmed by others.

Dr. Carlson asked if Dr. Holinger meant to imply that in a healthy individual the spinal fluid was not practically homogenous.

Dr. Holinger replied that so far only in pathological conditions it had been shown. We usually do not make multiple punctures of the vertebral canal in healthy individuals.

Dr. Carlson believed there were many reasons why it should be homogenous in the normal individual. The variations in the Wassermann reaction may be due to the location of the gumma.

Dr. George W. Boot said that he could vouch for the fact that one could do a spinal puncture within an hour after a skull fracture and get bloody spinal fluid. He had done this repeatedly. It is also possible to inject the spinal canal and cure disease as is often done in epidemic meningitis. Another point brought out by Dr. Boot was that streptococcus meningitis occasionally recovers after operation. He has had one such case. He saw a case in consultation with Dr. Holinger where a patient with streptococci in the spinal fluid recovered after a mastoid operation.

Dr. A. L. Tatum thought it was well known that any disinfectant had to be pretty strong in order to kill a germ and was then apt to kill the tissue. The most marked successes have been such as Dr. Boot mentioned, by vaccines and serums and the work with tryparsamid in the fourth stage of syphilis. It has been shown that this drug has no effect in the early stages but has a very marked effect in the late stages. This can hardly be understood at present but what Dr. Tatum wished to emphasize was that one could not pour a disinfecting solution of bichlorid, for example, on a tissue and expect to conserve it in the normal state. Disinfection in *vivo* is quite a different thing from disinfection in *vitro*.

Dr. Lewy (in closing) said that Dr. Bassoe's suggestion was included in his paper. He intended using vucin in the cisterna magna or by subarachnoid irrigation as soon as he was satisfied by animal experimentation that it was safe.

Regarding Dr. Carlson's suggestion that the drug should be injected experimentally at the same time or soon after infection of the meninges in animals, with controls, these experiments had all been done by Kolmer and Idzumi (quoted in the paper), using ethyl hydro cuprein hydrochloride (Optochin) a closely related cinchona derivative. Vucin is said to be no more toxic, but four times as germicidal. Kolmer concluded from his tests that the drug had preventive value if injected four to six hours after infection took place. With this as a basis Dr. Lewy undertook clinical verification. Recovery from meningitis with living cultures of pneumococcus or streptococcus in the spinal fluid almost never takes place. Dr. Boot's case was a rare exception. If any treatment would reduce the mortality to fifty or seventy-five per cent. he thought it would attract attention without control statisics.

Dr. Lewy had recently seen an article in the British Journal of Otology by Dr. Davis describing the result of injection of coloring matter under the arachnoid. Injected through the internal auditory meatus it all gravitated into the interpeduncular space only; injected in front of or behind the lateral sinus it gravitated into the cisterna lateralis and to some extent into the cisterna magna, but in no case did it show in the spinal canal. This made Dr. Lewy wonder if injections into the spinal canal would diffuse into the basilar region where they might do some good.

In regard to Dr. Tatum and Dr. Pierce's idea that it is a fallacy to expect local applications of germicides to reach infections within the cells, while we class this and other drugs as germicides, we do not yet know whether they act purely as

such or whether they do not also stimulate the cells to defensive activity in the manner that we believe antigens do.

DR. A. L. TATUM (by invitation) presented a paper entitled: Reflex Vasomotor Changes in the Nasal Mucous Membrane.

ABSTRACT

In recording vasomotor changes in the nasal mucous membranes of dogs and rabbits by means of the plethysmographic method described by Tschalussow in 1913, the speaker observed a vasoconstriction during or following partial asphyxia either by tracheal obstruction or by rebreathing of air containing CO_2. A vasodilation was observed on artificial respiration sufficient to produce a slight deficiency of CO_2 in the blood. The vasoconstriction from partial asphyxia was prevented by section of the cervical sympathetic nerves while by contract the dilation from the acapnia seemed to be unchanged.

Subjective experiments by the speaker and others seemed to confirm the above mentioned findings of nasal vasoconstriction or a sensation of diminished nasal resistance to air passage after mild asphyxia produced by rebreathing from a rubber bag or by holding of the breath for a short time and vasodilation or a sense of increased nasal resistance on voluntary over-ventilation.

Objective experiments were devised in such a manner as to avoid irritation of the nasal passages. By leading a constant stream of air under low positive pressure through a rubber tube to one nostril air will be forced into the corresponding nasal chamber and find its way out through the mouth or if the mouth and glottis be closed, out through the other nasal passage. A side tube is connected to a tambour or other recording device so as to record the lateral pressure within the rubber tube carrying the air to the nasal chamber. Obviously the tube inserted into the nostril must fit closely so as to avoid variable air leaks and also changes in position of the ala. By such a device the speaker's interpretation of the subjective sensations of resistance to air passage were confirmed by objective measurements.

DISCUSSION

DR. A. J. CARLSON said he was proud of Dr. Tatum's work. The results may not have at present any important clinical bearing but they extend our knowledge. Dr. Carlson thought the first result (vasoconstriction or slight asphyxia) was not difficult to interpret. We know that partial asphyxia produces vasoconstriction in general. This, according to Dr. Tatum's work, includes the nasal mucous membrane. The opposite results (vasodilation by low CO_2 in the blood) were not so readily explained and that meant that Dr. Tatum or some one else would have to go ahead and see what happens in other organs under this condition. They will have to put the arm, the leg and other organs in the plethysmeograph and see if when the CO_2 content of the blood is greatly reduced general vasodilation follows. This is probably the case.

Of course, it is perfectly obvious that vasoconstriction in the membrane will allow more air to go in if the other passages are open and it is obviously advantageous to secure more air in partial asphyxia, but Dr. Carlson could not see the advantage on the other side. The partial blocking of the nares by turgescence would be of no great value in preventing further ventilation.

DR. NORVAL H. PIERCE could see but a very limited application to the pathological conditions encountered in the everyday work of the laryngoligist and rhinologist. He believed it would be somewhat difficult to induce a patient to wear plugs of cotton in the nose that was already stopped up by the turgescence of hay fever. He was inclined to believe that the hay fever and so-called angioneurotic rhinitis cases which, parenthetically, are undoubtedly rapidly increasing in numbers, have to do largely with the peripheral reflex machanism. His reason for this was that in these cases with turgescence of the turbinates, the excretion of large amounts of colorless mucus and attacks of paroxysmal sneezing, amelioration of the symptoms may be obtained by cauterizing the sensitive areas of the nose,—the anterior head of the middle turbinate body, the anterior head of the inferior turbinate body and the tuberosity of the septum. Especially are the fits of sneezing reduced in frequency and violence, which indicates that we influence a smaller reflex arc than the one with which Dr. Tatum has dealt. Unfortunately, in most other pathological conditions in the nose there are constant plugs in the nose. For example, the so-called mulberry hypertrophies of the posterior ends of the turbinates. Then there is the true hyperplasia of the turbinate bodies, or when the nose is plugged up with polypi there is nasal asphyxia—stoppage of the nose, but these tissues cannot contract. It has been said that hay fever patients when they go into an icebox and remain there for some time have contraction of the nasal mucosa and breathe very much better for some time after they come out. That may be explained by assuming that the stimulation of cold air causes constriction of the nasal blood vessels.

DR. J. HOLINGER asked whether Dr. Tatum made the opposite experiment with negative pressure. This experiment is being made in offices nearly every day and is the suction treatment of diseases of the nose. The invariable result is a great relief of the stuffiness and congestion and after suction the nose is much freer and clearer for many hours.

DR. EDWIN MCGINNIS thought that a practical point to be gained from this experiment was that it is well not to do anything to the nasal mucosa that will inhibit the action.

Regarding hay fever and the fact brought out by Dr. Pierce, that the hay fever patient is able to breathe better after being in an ice box for some time, Dr. McGinnis' explanation was that in the icebox there was no pollen and if the patient remained in long enough the reaction subsides and the mucosa again takes up the normal function, with the result that the patient has good breathing until he gets more pollen in the nose, then he has another upset. It has been noted that after a good rain that washes away the pollen and dust the patients are much better. In this locality when there is an east wind blowing off the lake these patients are much more comfortable, which seemed to Dr. McGinnis to prove that this is a question of infection and not vasomotor reaction.

DR. ALFRED LEWY asked if anything in Dr. Tatum's experiments threw any light on the commonly observed phenomenon of nasal obstruction alternating sides.

DR. J. GORDON WILSON said the understanding of the influence of the nervous system on the mucous membrane of the nose and on the nasal capacity is of fundamental importance to rhinologists. Hence, they welcome any physiological light that can illumine their ignorance. When it is recalled that the nasal capacity and respiration can be modified by a nervous system extending from the fifth cranial nerve to the lumbar plexus, when one adds to this, cerebral stimuli—emotions (fear)—which apparently modify nasal capacity as well as respiratory rate and depth, one is impressed with the wide source of respiratory influences. Luckily, this wide range is not constantly in activity. The vague and sympathetic and dorsal nerves apparently can do the greater part of what is required. Yet the adjunct system can operate and may destroy the coordination through which the normal pathways act.

The technic on which the results presented were based he thought had advantages over those of the Russian observer. The addition of a tambour will give readings more easily read. The constant stream of air, if it can be made effective, is a decided step forward. It has always seemed to him that to base deductions in regard to variations in nasal capacity from the sensation of diminution of nasal resistance, following voluntary apnoea, is open to the following objections:

(1) The inspirations following the voluntary cessation of breathing is a compensatory dyspnoea and the air is taken in with greater negative pressure.

(2) On account of the increased negative pressure the air pathway through the nose is altered. Therefore one has increased suction plus altered nasal relations.

(3) Reactions arising from the glottis give sensations difficult to eliminate.

These objections would appear to be obviated by a constant stream of air at a fixed pressure.

The anatomy of the turbinates shows a structure designed so as to respond rapidly and with great mass variations to respiratory needs and therefore is a mechanism adaptable for nerve reflex stimuli. The venous spaces with their thick walls of muscular and elastic tissues readily and quickly react to stimulation. But is the stimulation always reflex from the periphery? What about the stimuli which arise directly in the respiratory and the vasomotor centers from changes in the circulating blood? It appeared to him that one has also to consider local changes in the nasal vessel walls in response to the circulating blood in the venous sinus and it may be influenced by absorption from surface epithelial cells.

GREENE COUNTY

The quarterly meeting of the Greene County Medical Society was held in Greenfield on Friday, Sept. 12, 1924. The meeting was called to order by the Vice-President, Dr. Wm. H. Garrison, at the city hall. The minutes of last meeting was read and approved. The attendance was not large as it was uncertain whether the meeting would be held on account of muddy roads until late that morning. Roadhouse and White Hall were liberally represented, but Carrollton failed to show up. The program was as follows: "Blood Transfusion," Dr. A. R. Jarman. Adjournment was taken for a chicken dinner served at the Palace Hotel. After dinner, meeting was called to order, Dr. Wm. H. Garrison read interesting paper on "Tetanus," which was followed by a general discussion. Dr. Robert Barclay of St. Louis gave an instructive talk on diseases of the ear.

The regular annual meeting will be held in Roodhouse, the second Friday in December. The Greene County Medical Society cooperating with the State Department of Public Health in the Better Babies Conference at the Greene County Fair, will assist in the examination of the babies.

A vote of thanks given to Doctors Cravens and Bulger for the excellent dinner.

W. Knox, M. D.,
Secretary.

Marriages

Harold Hamnett to Miss Mary Kathleen Kopp, both of Princeton, Ill., August 2.

Oscar S. Lenit, Chicago, to Miss Myrtle L. Childers of Darlington, Wisconsin, recently.

Charles Arthur Potter, St. Charles, Ill., to Miss Althea Whitney of Aurora, at Wheaton, August 26.

Personals

Dr. Emil Windmueller, long a resident of Woodstock, has removed from Los Angeles to Sacramento, where he will take over the practice of Dr. Crawford during the latter's absence in Europe.

Dr. Joseph Aspray, of Spokane, Washington, gave an address September 11 before the Chicago Roentgen Society at Cook County Hospital, on "A Superior Routine Technic in the Roentgenographic Examination of the Nasal Accessory Sinuses."

Dr. Max Thorek, Chicago, gave an address on "Studies in the Technique and Clinical Application of Sex Gland Transplantation," before the Michigan State Medical Society, September 10. William D. Wrightson, Baltimore, formerly junior assistant sanitary engineer, U. S. Public Health Service, has been appointed health officer of the Quincy public health district.

Dr. Effa V. Davis, Dr. Helen E. Gorecki and Dr. Esther Quigley, delegates from Chicago to the Medical Women's International Association in London, have returned with glowing reports of the hospitality of English medical women. There were 305 delegates present, 22 from the United States. Canada, South America, Australia, New Zealand, India, France, Switzerland, Austria, Czecho-Slovakia, Poland, Russia, Turkey, Germany, Sweden and Norway were represented. Maternal morbidity and mortality was one of the most interesting subjects under discussion. Dr. Esther Lovejoy of New York City presided. Dr. Florence Barrett of London was elected president for the next five years.

News Notes

—St. Francis Hospital, East St. Louis, is planning a $250,000 building.

—A $200,000 hospital building is being erected for the Dixon State Hospital, Dixon.

—The new $450,000 addition to the St. Francis Hospital, Evanston, will be opened October 4.

—Dr. Ralph B. Cobb has been appointed superintendent of the Iroquois Memorial Hospital, Chicago.

—Work has been stopped on the proposed enlargement of St. James Hospital, Chicago Heights.

—A new $100,000 hospital and restaurant will be erected at the Illinois Soldiers' Orphans' Home at Normal.

—The Iroquois Hospital, of the Chicago Department of Health, is said to be doing a "land office" business in treating acute respiratory infections with inhalations of chlorine gas.

—It is reported that the state board of health closed the schools of the city of Cuba, September 12, on account of an epidemic of scarlet fever which has affected more than 100 of the 600 pupils in the schools. The disease is in mild form.

—The King's Daughters, Evanston, recently opened a home for convalescent heart patients, admitting girls and women selected from a limited group. Until the community develops, all applications are to be sent through the office of the Chicago Association for the Prevention and Relief of Heart Disease.

—Judge Walter C. Lindley declared the bonds of Dr. James E. Inskeep, Carmel, forfeited, September 9, for failure to report in the U. S. District Court for trial on a charge of violation of the Harrison Narcotic Law, it is reported. Inskeep has previously been convicted in a federal court on similar charges.

—Since January, 1921, the state department of health has conducted more than 350 clinics for crippled children at forty-two points throughout the state. A total of 8,228 patients attended the clinics and medical service was given all who were unable to obtain it from private sources. Only 10 per cent of the children seen were placed in institutions.

—It is reported, Dr. William H. Zorger and Mrs. Charles Miller, both of Champaign, who were jointly indicted by the federal grand jury recently for conspiracy to violate the Harrison Narcotic Law, were arrested, September 5, on a bench warrant. Dr. Zorger, who was also indicted separately for violation of the Harrison Narcotic Law, was released under $4,000 bonds.

—More than 1,650 babies from fifty-one counties are scheduled to attend the State Fair Well Baby Conference this fall. This surpasses the registration of any previous year by nearly 500. Each baby will be given a careful physical examination by physicians of the state health department, and the most perfect specimens will receive awards. The state fair conference is but one of many conducted in the state since January and about 10,000 children have been examined.

—A cordial invitation is extended to all interested in public health to attend the Fifty-Third Annual Meeting of the American Public Health Association at Detroit, Michigan, October 20-23. Headquarters will be in the Hotel Statler. The Detroit Local Committee, headed by Dr. R. M. Olin, State Health Commissioner, is engaged in arranging matters for your comfort and entertainment. You are assured of a hearty welcome from them and from the officers and members of the Association.

—The cornerstone of Rush Medical College, laid Nov. 20, 1875, was moved, August 28, in the wrecking operations now under way. The Grand Master of the Masonic Lodge of Illinois removed the box from the stone containing records that had lain there forty-nine years. There were copies of the *Chicago Medical Journal* of the year 1867, copies of Chicago newspapers, a city directory, tourists' guide for the year 1875, the Rush Medical College charter, pictures of the faculty and the valedictorian address of 1871. A number of prominent Chicago physicians were present at the ceremony.

Deaths

George W. Hill, Cave-in-Rock, Ill. (licensed, years of practice); aged 74; died, July 24.

Flora Isetta Harbaugh Barnett, Chicago; Northwestern University Woman's Medical School, Chicago, 1892; aged 61; died, August 30, at St. Vincent's Hospital, Belleville, Ill.

Clayton Herman Bokhof, Dixon, Ill.; Northwestern University Medical School, Chicago, 1899; aged 51; died, September 3, at the Dixon Public Hospital, of peritonitis and pneumonia.

Francis A. Neville, Meredosia, Ill.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1887; aged 63; died suddenly, in August, of heart disease.

Charles Edwin Cord, Chicago Heights, Ill.; Rush Medical College, Chicago, 1900; aged 62; was killed, September 12, when he jumped from the fifth floor of the Presbyterian Hospital, Chicago, while suffering from diabetes.

George Washington Steely, Louisville, Ill.; St. Louis College of Physicians and Surgeons, 1899; a fellow A. M. A.; Captain, U. S. A., in the World War; aged 49; died, September 9, of peritonitis following an appendectomy at Olney Sanitarium, Olney, Ill.